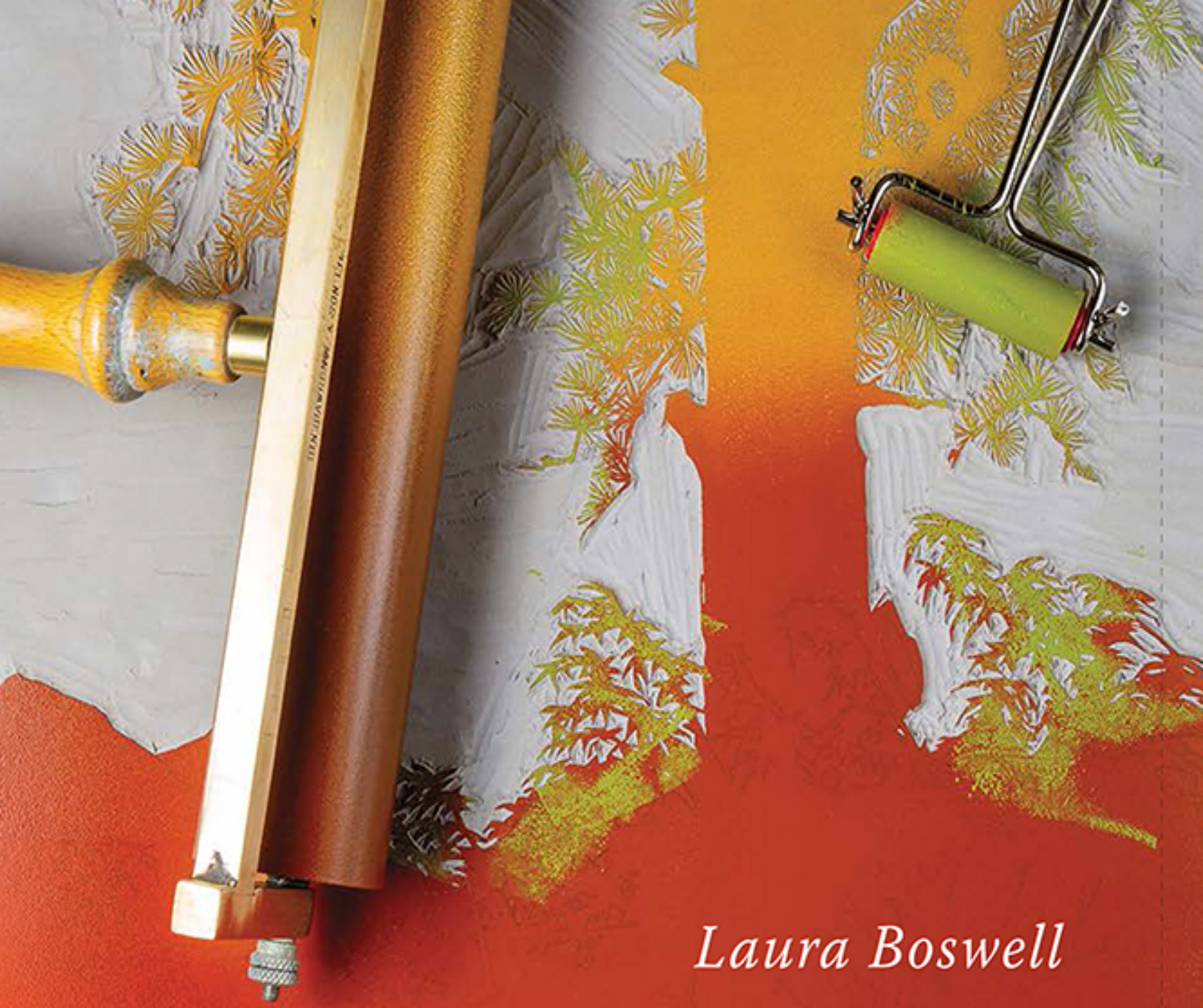

*Laura Boswell*

# LINOCUT
## *and* REDUCTION PRINTMAKING

design and techniques

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Frontispiece: Blending yellow ochre and phthalo blue oil based ink on my glass inking slab.

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Dedication
For Sal and Brian, Liz and John

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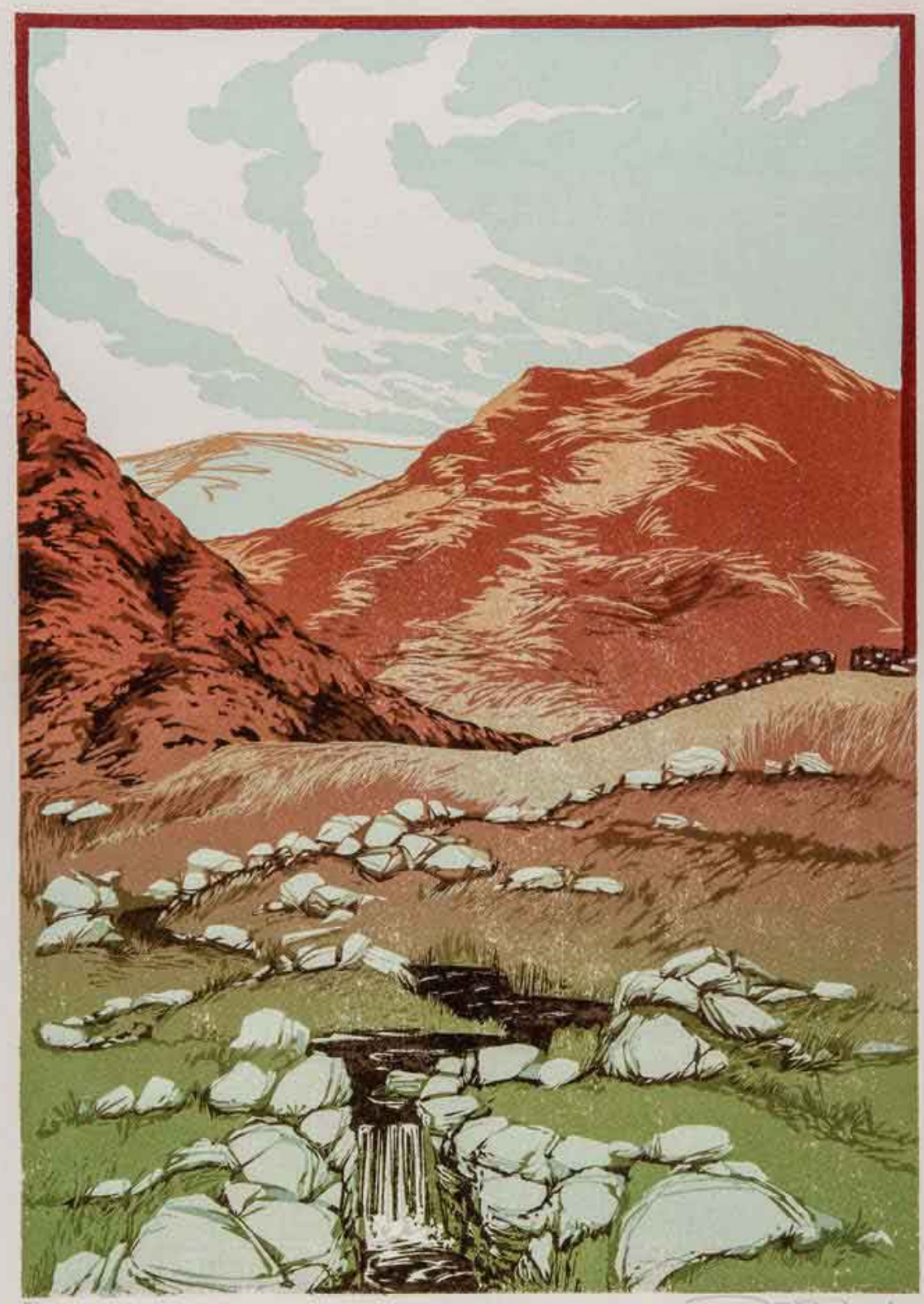

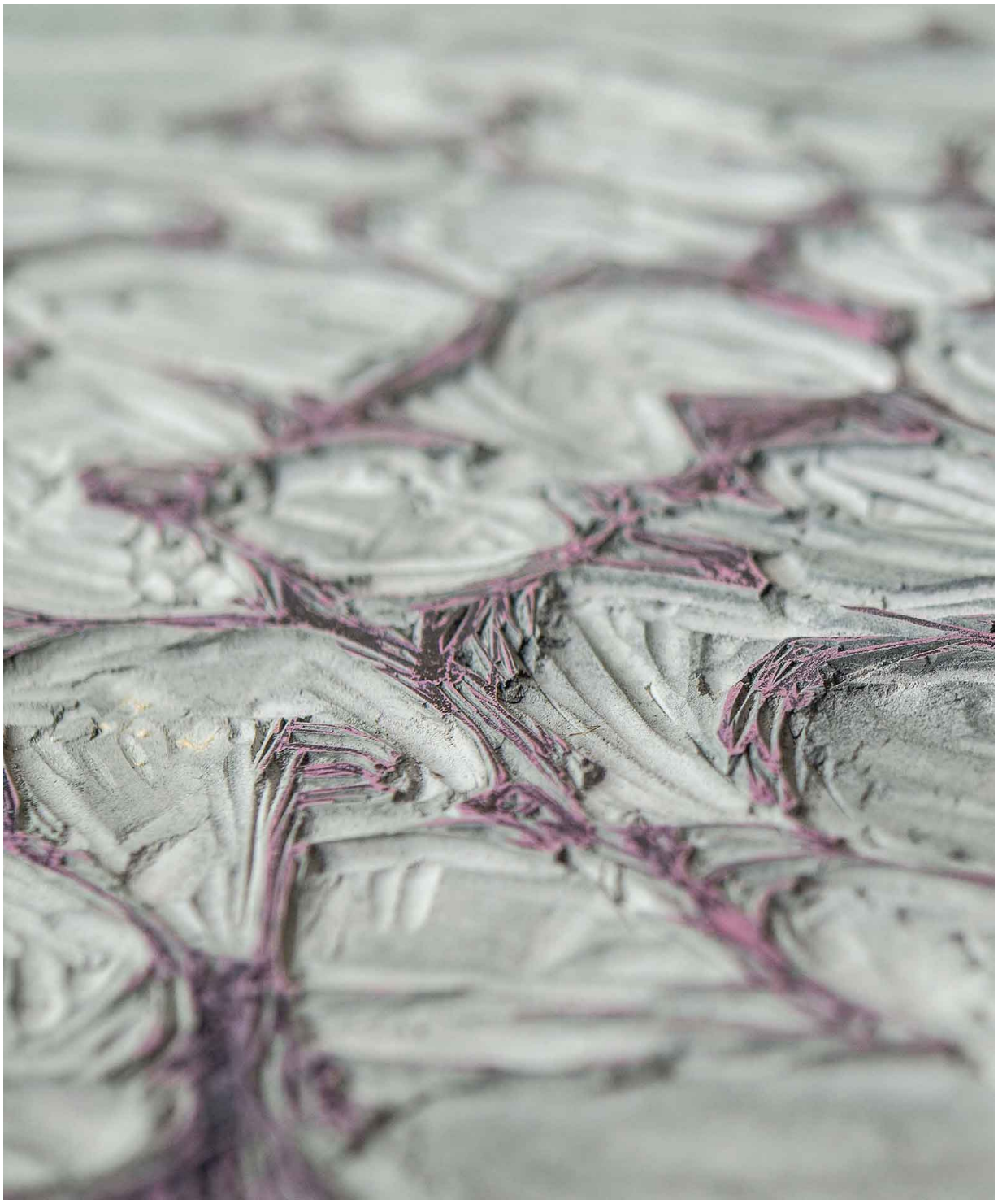

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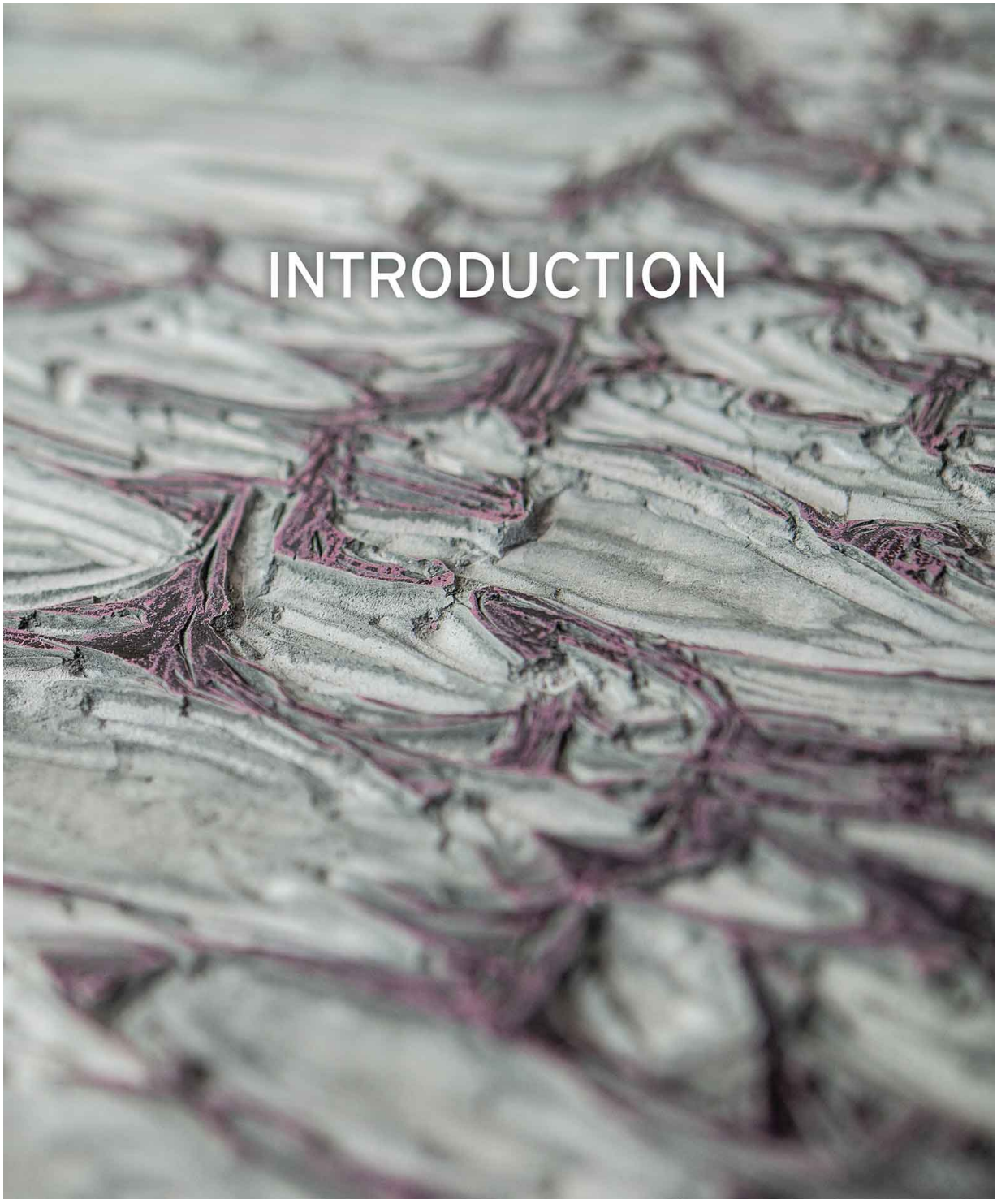

INTRODUCTION

My first encounter with lino was not auspicious. Aged thirteen, I was given a piece of lino and some tools to produce a ‘cheerful sun’ design during art class. The lino was rock hard, the tools hopelessly blunt and, in an ill-advised attempt to combine art with sewing, the resulting sorry block had to be printed onto rough hessian cloth with lumpy ink. I adored my art class and my sewing lessons. Linocut conspired to ruin both that day.

Luckily for me, I have a good deal more success with lino now. These days I am a full-time printmaker and linocut, partnered with Japanese woodblock, is my technique of choice. I’ve come to love linocut, specifically the reduction printing method, as an incredibly flexible and creative printmaking process. I doubt I’ll ever stop specializing in lino now, I find it a printmaking method with almost endless capacity for experiment and invention.

This book is a deep dive into my kind of linocut printing. I’ll help you avoid my schoolgirl angst with lots of practical advice, ensuring you’ll be enjoying the buttery cut of fresh lino, razor sharp tools and clean inking. I’ll share my process for gathering ideas and turning them into design drawings for print, with cheerful sun designs entirely optional. Most of all I hope to inspire you to experiment with the reduction process and to dispel any ideas that reduction linocut is an inflexible method, requiring flat colour and a fixed game plan.

One of my linocuts in progress. Artist lino is a wonderfully versatile material to cut and print.

## HOW THIS BOOK WORKS

While this book is designed to help you explore reduction linocut printmaking, much of the content will also be helpful and relevant to single colour linocut and multi block linocut printing. The book is divided into three parts. Throughout the book you will notice that the grey artist lino in many of the photographs is pink, that's because I have stained it for ease of cutting, also for ease of photography. There are full instructions for how to stain lino in Part One under 'Lino'.

## Part One

Part One is devoted to tools and materials. Revel in the sheer loveliness of printmaking paraphernalia, explore inks and their additives, understand why the 'squidge' factor of your roller matters and discover why an artist's lino is only half baked. This section explains how to get the best from your papers, inks, rollers and cutting tools, with practical guides on everything from cutting techniques to installing a printing press, from sharpening your tools to signing your work.

## Part Two

Part Two is all about drawing and design. This section deals with the often vexing question of how to go from initial vague idea for a linocut to drafting a design and transferring it to lino, ready for cutting and printing. While I hope to persuade you away from too much rigid planning and into a flexible approach to linocut, a strong understanding of designing specifically for lino is helpful and is explained here. As well as designing for print, this section deals with the practical issue of transferring your initial design to the lino and explores different tools for drawing and mark making directly onto lino.

## Part Three

Part Three consists of fully illustrated reduction print examples. In this part of the book there are eight different prints, broken down into layers to show how each print is developed and the techniques involved. The colour layers of each print are shown separately, as

well as a set showing the build-up of colour layers as the print progresses.

Print one documents a simple reduction print from start to finish, printed in flat colour layers. Photographs showing the marking up and cutting of the lino are included for this print.

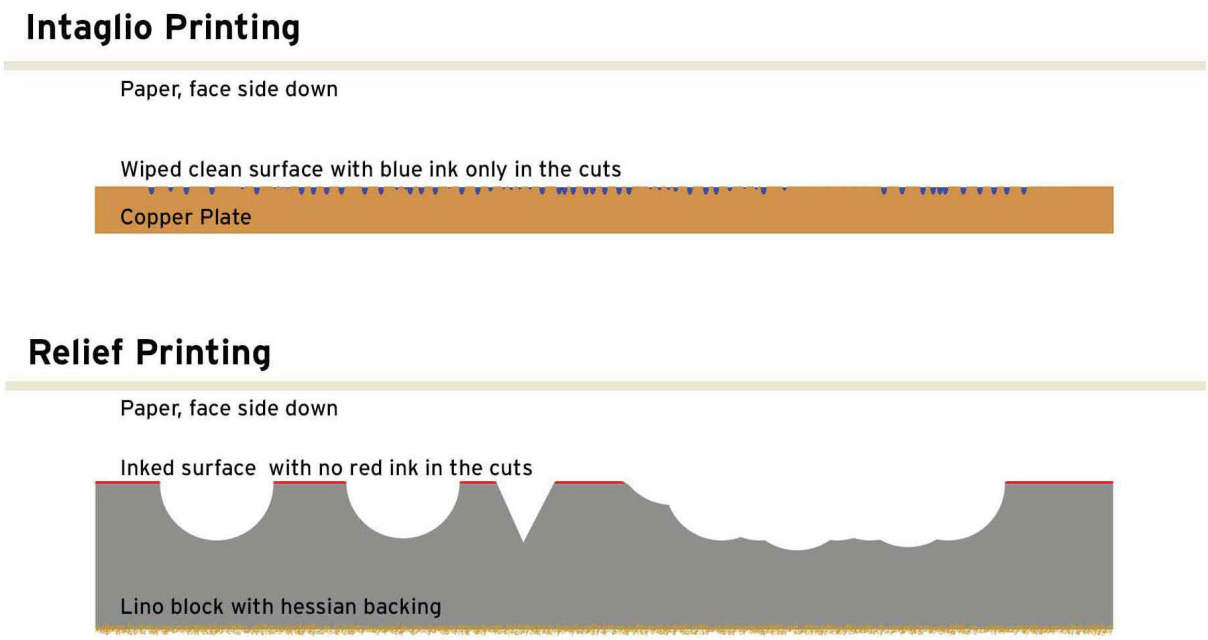
Prints two to five feature the same design printed with minor changes to the cutting and major changes to the printing techniques for very different results.

Prints six to eight are more sophisticated prints and show different techniques and design approaches.

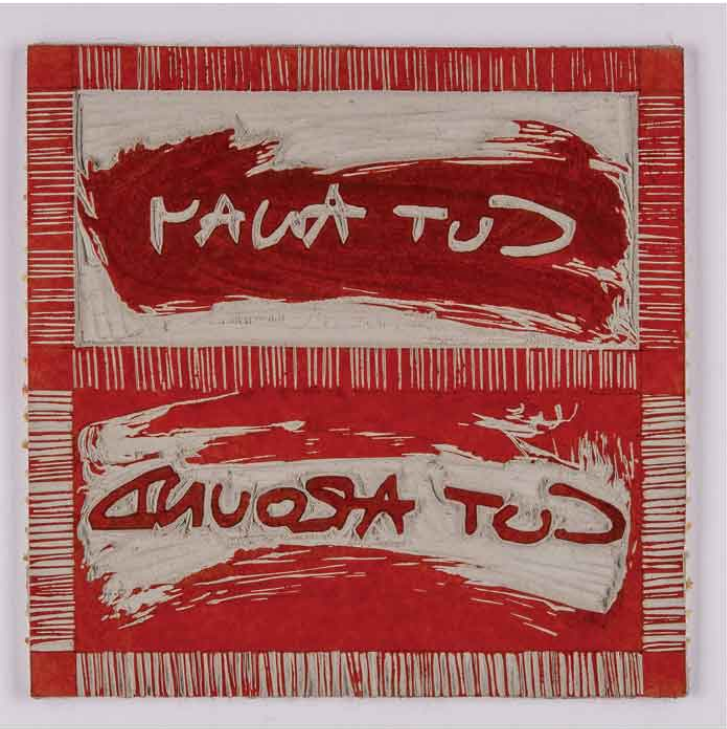
Prints nine and ten are case studies from my own editioned work.

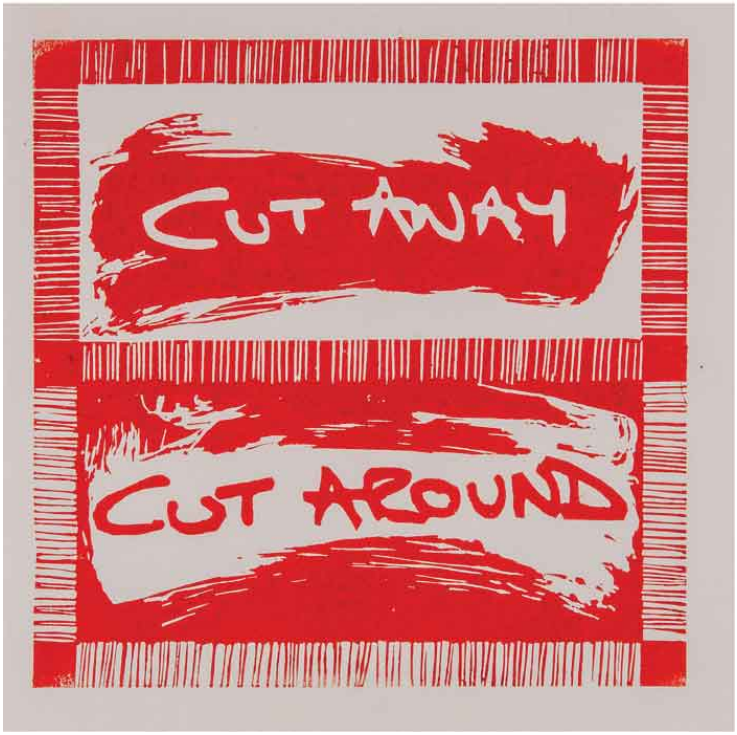
## LINOCUT PRINTMAKING: A RELIEF PRINT PROCESS

The reduction linocut method I describe in this book is a relief process. Printmaking techniques are generally divided between relief printing and intaglio printing. The two are very different in method and result. Linocuts, woodblocks and wood engravings are all examples of relief printing. Etchings, mezzotint and dry point prints are all examples of intaglio printing.


Intaglio Printing
Paper, face side down
Wiped clean surface with blue ink only in the cuts
Copper Plate
Relief Printing
Paper, face side down
Inked surface with no red ink in the cuts
Lino block with hessian backing

At the top of this diagram there is an etching plate, inked and the surface wiped clean ready for intaglio printing. Below it is a lino block with the surface inked for relief printing.




I cut this little linocut to give my students a physical reminder of which part of the lino prints and which parts do not.

In a relief print, it is the surface area of the block (the material to be inked up) that is inked up and printed, usually with a roller (brayer). Where material is cut away, that area of the block is lower than the surface area. These lower areas are not inked and do not print. In an intaglio print the opposite is true. The block (or plate) is inked all over and the printmaker deliberately pushes ink down into the cut areas. The printmaker then wipes away the ink from the surface of the block, leaving ink in the cut areas only. It is the remaining ink, lying in the cut away areas, that prints. It is possible to cut and print up lino blocks using the intaglio method, but that technique is not covered in this book.

Understanding that linocut is a relief process and that it is the surface of the lino that prints is very important. As a beginner, it is very easy to become confused between parts of the lino that are needed for printing and must stay uncut, and those parts that need cutting away and will no longer print.

## LINOCUT: SINGLE COLOUR, MULTI BLOCK AND REDUCTION

This book has plenty of general advice about linocut, but its focus is the reduction print process for linocut. Reduction printing is not the only method. Below I have described the three common approaches to making a linocut print in very simple terms.

### Single colour linocut

Single colour linocuts are made by using one piece of lino and are printed with one application of ink, usually in a solid colour and traditionally in black. All the cutting needed to create the image is completed before the block is inked. The resulting print is a binary one, relying on the cutting of the block rather than on different areas of colour to make sense of the image. Single colour linocuts are often the starting point for beginners as the approach is simple and the equipment needed minimal. However, single colour linocuts can be extremely sophisticated and even the simplest idea needs developing carefully to work well as a binary print.

*Bridport Rope Making* – a single colour linocut by printmaker Robin Mackenzie, showing a masterful control of tone, design and composition. (Photo: Robin Mackenzie)

## Multi block linocuts

Multi block printing is one of the two basic ways to create a linocut with different areas of colour, the other being reduction printing. With multi block printing, as the name suggests, the printmaker cuts a series of different printing blocks. Once cut, the blocks are inked up individually and printed to create the finished print. The printmaker must use a registration system (*see* Chapter Six, 'Pressure and Registration') to line up each block correctly for printing. The registration system ensures that each block fits accurately with the other blocks to create the finished print.

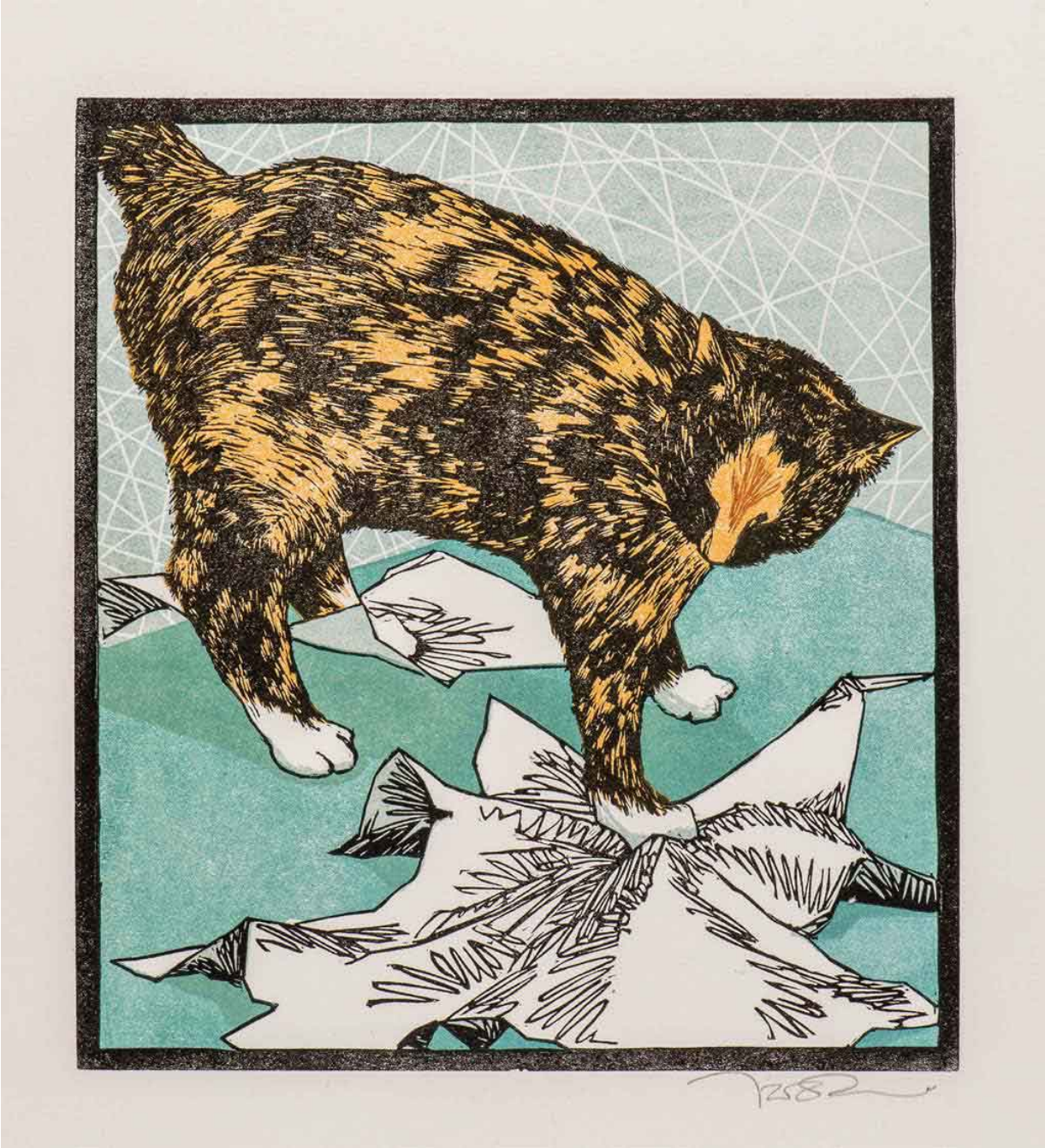
## Reduction linocuts

Like single colour linocut printing, reduction linocuts are made from one piece of lino. Unlike single colour linocuts, the piece of lino used in reduction printing is cut and printed multiple times throughout the printmaking process. The printmaker begins by printing the first layer of colour, usually the palest tone. They then cut away any areas of the lino block they wish to remain that first colour. Once cut, the block is inked with the next colour and printed again. The fresh ink covers the paler layer, except where the lino has been cut away. The printmaker then repeats this process, gradually cutting more of the block away, layering the ink in increasingly darker colours until the design is complete.

*Small Trees, Big Sky* is a reduction linocut. As with most reduction linocut prints, the image is printed from lightest colour to darkest.

## WHY CHOOSE THE REDUCTION PRINTING METHOD?

In my work I swap between both methods; reduction printing for linocut, multi block printing for Japanese woodblock. Japanese woodblock requires a multi block approach and I have learned to appreciate the method when working in wood. When it comes to lino, my heart lies with reduction printing.



*The Critic* is a multi block print with four blocks, one of which has been printed in two colours.

*Cherry Trees, Stormy Sky* is a Japanese woodblock print. In this technique multiple blocks are cut from wood and printed with watercolour paints combined with rice paste, using brushes instead of rollers.

Here are some pros and cons for multi block and reduction printing, the two basic approaches to linocut printmaking.

## Multi block printing

Multi block printing allows the printmaker to print as many prints, in as many colourways, as they please. The printmaker has the freedom to proof (test) print the print as a complete image before final decisions about colour are made. If the printmaker is printing an edition, prints can be made as they are needed, rather than completing the entire edition in one go.

Each block of a multi block print can be printed individually, putting a single layer of ink directly onto the paper, without inks layering on top of each other. This permits a wide range of different contrasting colours on the same print if desired. However, multi block can be costly in terms of time and materials as the printmaker must work with multiple pieces of lino. Once cut, blocks may take up a sizeable amount of storage.

Multi block requires a system to ensure the accurate transfer of the various parts of the design drawing to their correct position on each separate block for cutting. It also requires a registration system

(method for lining up the blocks and paper) that will position multiple blocks in the correct place to line up with each other while printing, as well as with the printing paper. This registration system must be available to use again if the printmaker wants to make more prints at a later date.

## Reduction printing

The process is economical in terms of lino, as a single piece of lino is used for each print. As the block is destroyed in the printing, it does not need to be stored once cut and printed. The printmaker is only working on a single block, rather than having to prepare, cut and print multiple blocks. However, the printmaker must make all the prints they need from the very beginning of the process, as additional printings later are impossible. As all prints are made at once, the complete edition will need to be stored.

Reduction linocut offers a flexible approach, allowing the print to change and develop as I work. Here I have already begun to cut and print the foreground while still making decisions about the cloudy sky.

With the reduction method, there is no need for a system to line up different parts of the design when transferring the design drawing

to the lino for cutting. When printing, registration is a simpler process as the paper only needs to line up accurately with a single block.

Printing repeatedly from one block means the inks build up in layers, requiring the printmaker to think carefully about colour. Layering colour gives the printmaker many interesting opportunities for different inking effects, or it may be restrictive depending on how the printmaker likes to work. Test prints and proofs have to be made during the creation of the print, as the printmaker is working. There is no opportunity to make a complete test proof of the whole print before printing the edition. If prints are damaged during the process and lost, they cannot be replaced.

## WHY I PREFER THE REDUCTION METHOD FOR LINOCUT

I like to approach linocut printmaking much as painters work with their canvas, with the freedom to change the outcome based on how the work is developing. I have a design drawing to get me started and an idea of where I want to go with the print, but I like the print to evolve as I work.

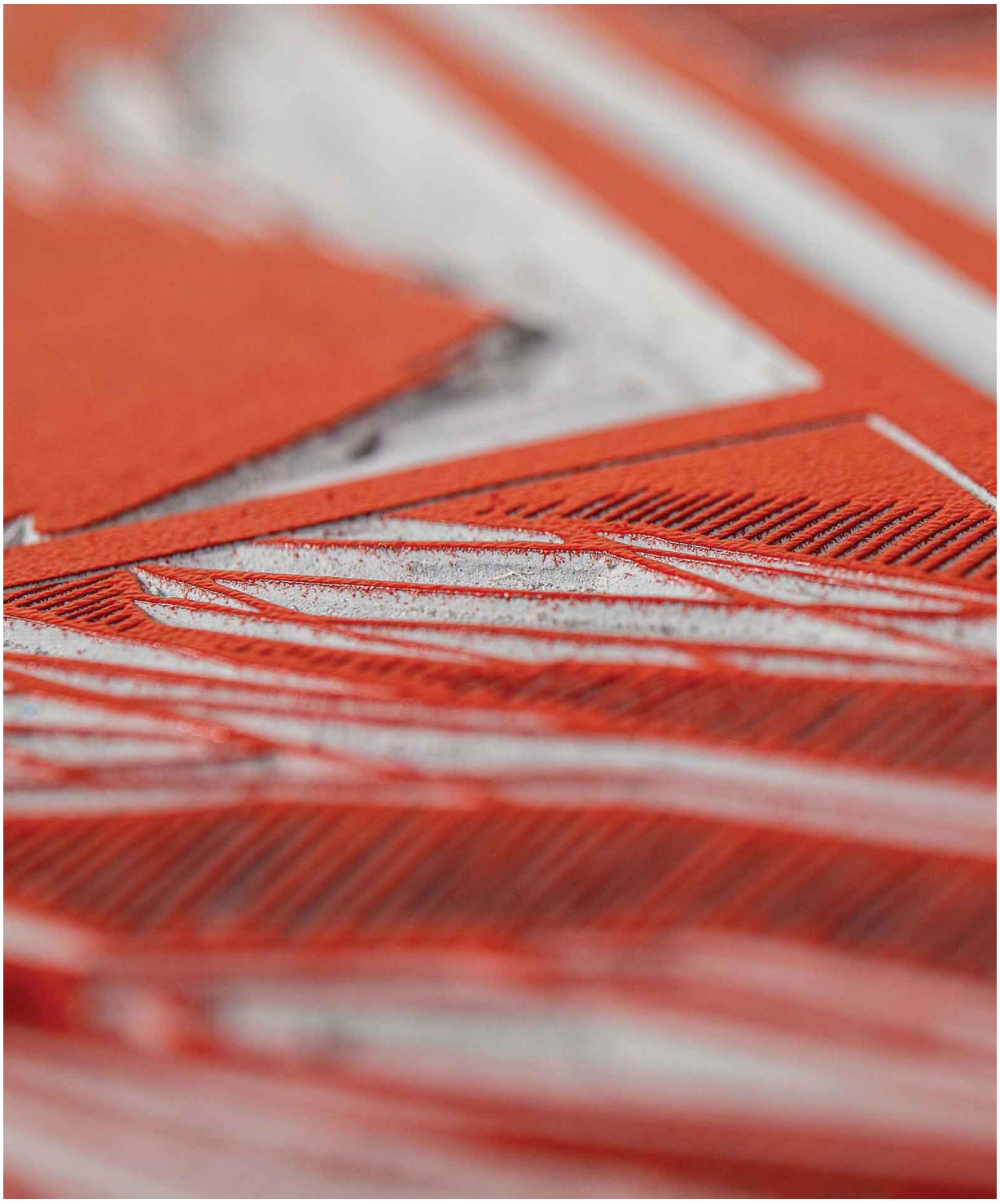
Here is the finished reduction print *Noonday Squall* with the final version of the sky in place.

Sometimes I have to use the multi block method to make demonstration linocuts for printing at shows. To do this, I make my design drawing, decide how it is to be divided up into the different colours and transfer it to the various blocks for cutting. I must decide how the final print is going to look in all but colour choice at the transfer and cutting stage. I can perhaps edit the blocks and make a few minor alterations as I cut, but the fundamentals of the finished print need to be decided in advance of the printing. That's where I struggle.

My reduction prints are very much the result of making choices at each layer of cutting and printing. I decide where to go next based on what I think the print needs, not on how I planned the print to look. This is particularly true of how I ink the print, as my colours are decided very much as the print is made. Each new colour added is chosen dependent on the colours already printed on the paper. The layering effect of the ink, a characteristic of reduction printing, plays a very large part in the end result. I often use a great deal of transparent ink and when I do, I rely on the underlayers of the ink to bring life and depth to the layers on top.

Lastly, there’s the jeopardy. There is no going back with a reduction print: once cutting and printing starts, it’s a one-way journey from first cut to finished print. It is one of my favourite things about the method. It certainly concentrates the mind and teaches you to be careful. If a dirty thumb print in the wrong place spoils a multi block print, it means an infuriating session of reprinting. In reduction printing, it means your edition is one print down and nothing can be done.

The heightened investment of the reduction print process means much more incentive for creative solutions when things go wrong. When abandoning your block means you’ll lose the entire print run, it does concentrate the mind to invent a solution that pulls victory from disaster! While I owe much of my confidence in my experimental approach with linocut to years of practice, testing and experience, a significant part of it comes from the need to remedy accidents. I have learned from necessity that it is perfectly fine to change and adapt as the print develops and now, I wouldn’t have it any other way.



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CHAPTER 1

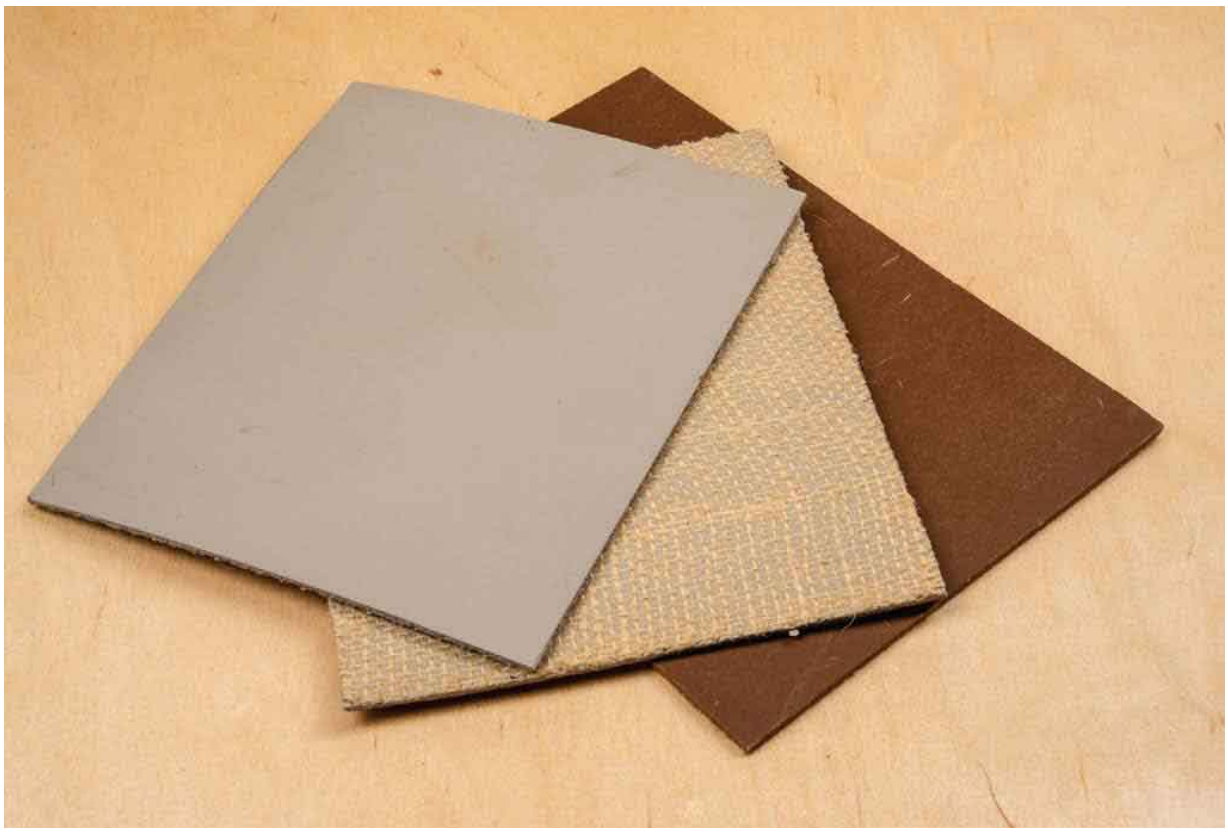
# Lino

It is important to note that the ‘lino’ referred to throughout this book is traditional grey artist lino (sometimes called battleship lino). All the processes described in the book, particularly the transfer methods for marking up the lino for cutting, are designed for use with grey artist lino. It is the material I work with when making my own linocuts and when teaching others to make linocut prints. In most of the photographs I have stained the surface of the lino pink (*see* ‘Staining’, this chapter) both for ease of cutting and for improving contrast in the photos. For working with other relief printing materials please see the advice later in this section.

A roll of traditional artist lino. It will take a day or so to flatten out for cutting once it has been unrolled.

# TRADITIONAL ARTIST LINO

Traditional artist lino is made from a combination of linseed oil and solids backed with jute fabric**.** As its name suggests, artist lino is made from the same ingredients as traditional flooring linoleum, now sometimes called by the trade name Marmoleum. It pays to be careful about products described as lino. The word ‘lino’ has become something of a catch-all name and is sometimes used as a general description of kitchen and bathroom flooring made from entirely different materials totally unsuited for printmaking.



traditionalThese traditional lino products are designed for printmaking. They are thicker than traditional flooring, but have the same jute backing cloth.

Artist lino comes in grey, tan and brown colours and all are thicker and softer than flooring lino. This softness is due to a shorter drying time for artist lino compared to flooring lino, hence a joke in the trade about ‘half baked’ artistic types needing to work with a ‘half baked’ version of the real product. Grey artist lino is the best quality

of the three colour types. It is a smooth material throughout with fine consistent particles, allowing cutting in any direction. Tan and brown artist lino are a slightly coarser version of the grey artist lino. They may not work as well as the grey for cutting and printing fine detail but are still a pleasure to use.

Grey artist lino is still sometimes referred to as ‘battleship’. This is in reference to the heavy gauge lino used by the American Navy as flooring on battleships and submarines. Lino is still used by the military for land-based flooring, but was abandoned by the US Navy for shipping after the Pearl Harbour attack of World War Two, due to its flammability.

## HOW LINO IS MADE

In simple terms, the process begins with mixing linseed oil and natural pine rosin together in large boilers. The linseed absorbs oxygen and, in combination with the pine rosin, creates a flexible binder called linoleum cement. The cement is then stored in a heated room until it reaches the right elasticity.

When the lino cement is ready, wood flour is added along with finely ground limestone. Colour pigments are added to the mix, which now consists of lino granules. The granules are then passed through large rollers at high pressure to form a sheet, in a process called calendering.

Rolls of jute backing are fed through a machine to combine it with the lino and both are passed through another pair of calendering rollers. The two rollers are set at individual temperatures and speeds. Working in combination, they press the sheet lino and the jute fabric backing together. The lino is then transported to a drying chamber and hung to dry for several days.

Lino hanging up to cure as part of the manufacturing process. (Photo: Forbo, by Matthias Groppe, Paderborn)

## FROM FLOORING TO ART MATERIAL

Lino was invented in England in 1863 by inventor Frederick Walton after he discovered how to solidify linseed oil through oxidization. Realizing that the oil could be combined with cork and other materials to form a floor covering, he established the Linoleum Manufacturing Company in 1869. Walton's invention swiftly became popular and his business a success. It is pleasing to note that Walton was both a keen art collector and enthusiastic painter himself. Sadly, given his thirst for invention, no mention is made of Walton attempting any lino prints.

It is the artists of Der Brücke Group in Germany who were the first recognized users of lino for printmaking, creating their first linocuts between 1905 and 1913. The exact dates are slightly confusing as their early linocuts were often labelled as woodcut

prints. Once discovered, lino was quickly adopted as a printmaking material. Lino's consistent surface and ease of cutting made it a popular alternative to wood for relief prints, especially for teaching.

## ALTERNATIVES TO LINO

There are various other materials on the market for making 'linocut' prints. These are newer printmaking introductions such as Japanese vinyl, SoftCut and Speedy Carve. They are popular products and work well for many printmakers. They are often sold in starter kits as an easy to cut introduction to relief printing.

These products are alternatives to lino and many artists work happily and successfully with them. They have different properties to the artist lino referred to throughout this book. (Photo: Handprinted)

A linocut using Speedball's Easy Carve. An easy and effective way of entertaining a young printmaker and sharing their creative talents among friends and family.

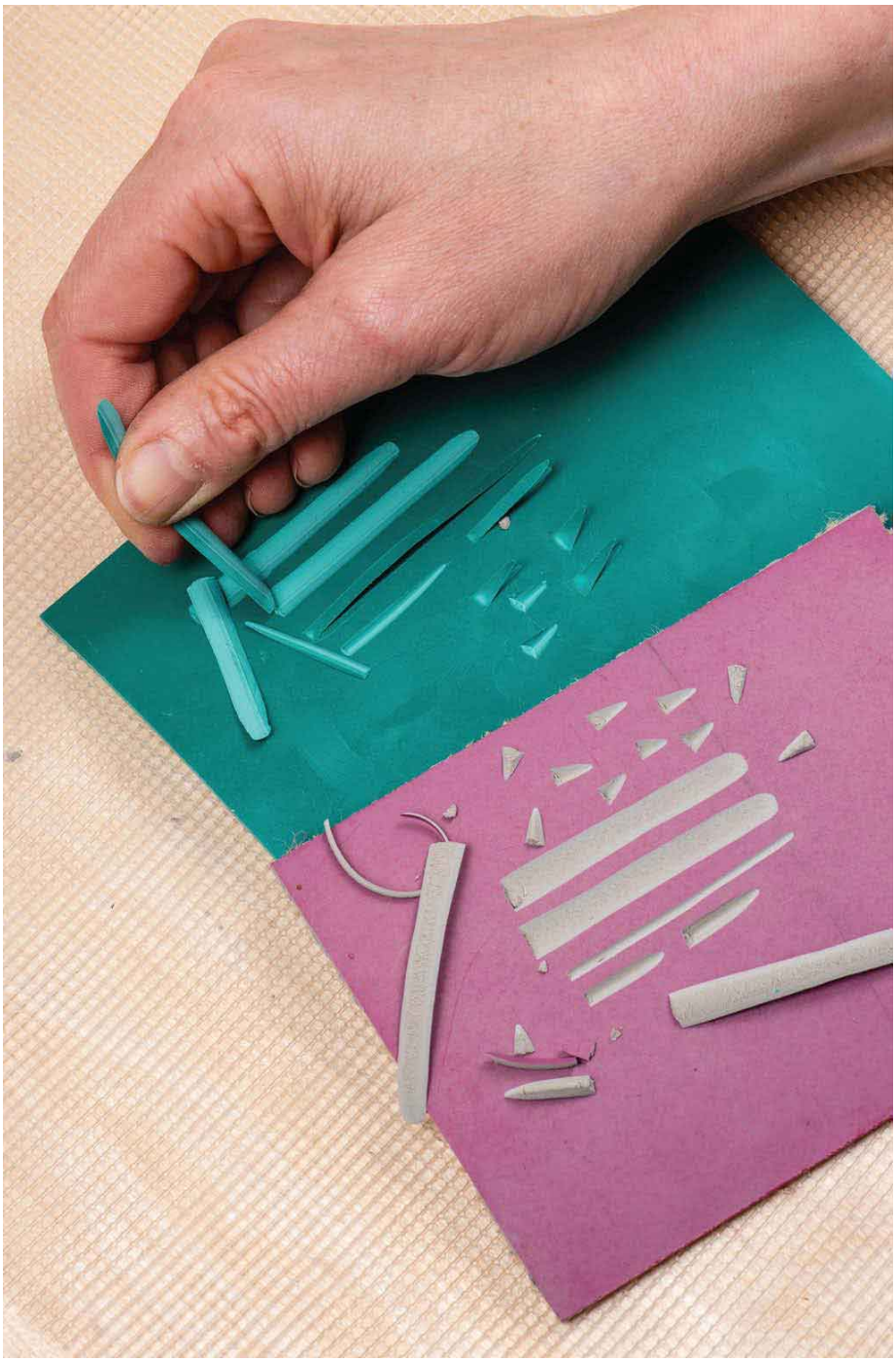
All these materials are designed for relief printmaking and can be cut and printed using exactly the same inks and tools as artist lino. They do have different properties from the artist lino that I use and have written about in this book. If you prefer to work with the alternative materials listed above, the method I have detailed in Part Two for transferring your design to your lino using carbon paper may not work. You will also need to run your own tests for pens, pencils and so on for direct drawing on your chosen block.

In addition to these plastic-based materials specifically designed for printmaking, it is possible to work with more improvised materials such as polystyrene and foam sheets. If you want the pleasure of introducing small children to printmaking, working with foam board or polystyrene and 'cutting' with a pencil or biro is great fun. Though I'd still advise using proper printing inks for the best results. Children have a wonderfully inventive approach to working in print. I've

learned a lot working with free-thinking printmakers under the age of ten.

## WHY USE TRADITIONAL ARTIST LINO?

The primary reason that I work exclusively with grey artist lino is down to the material's behaviour during cutting. When a tool cuts artist lino, the material being removed will snap off without the cutting tool needing to exit the material to complete the manoeuvre. Modern substitutes for lino have a rubbery quality. Where lino would snap cleanly, the alternative materials need cutting away at the end of every cut. This tends to encourage the printmaker to work predominately in scooping cuts as the simplest and most efficient way to move the tool in and out of the material easily. The brittle snap of lino makes it a far more adaptable material for inventive cutting, encouraging the printmaker in a wide variety of mark making and cutting techniques. Once you have learned to exploit the snap of the lino to your advantage when cutting, it is hard to work with a material that refuses to break when wanted.



Artist lino will snap cleanly at the end of each cut, an effective aid to cutting. Lino alternatives require the tool to complete each cut. Pulling the material to remove it risks tearing.

If large prints are your thing, artist lino is available in a roll and is easily cut down for smaller projects.

Artist lino is available for sale in sheets or as a roll. I buy mine on the roll, cutting it down in an assortment of sizes to suit me. The roll also allows me to make much larger prints than I could using the lino alternatives. These alternative materials do come in sheet form in a variety of sizes, but not in roll form at the time of writing.

Artist lino is firmer than the modern alternatives (do not be put off by the word ‘firm’, fresh lino is easy to cut). This makes artist lino more suitable for cutting and printing very fine work, especially when a detail or line is isolated and the material around it cut away. The softer materials, especially when printed in a press, can compress or distort slightly. Fine, isolated details may look a little clumsy in the finished print as a result.

Here, two types of artist lino and an easy cut material are marked up with the same markers, paint and carbon. The lino alternatives may take a mark initially, but their smoother and non-absorbent surfaces means it is likely that marks will smear or wipe away easily, so tests are needed.

The transfer method for reversing and transferring your design permanently from paper onto the lino explained in Part Two of this

book works best with artist lino. In addition, artist lino is easy to mark up with a wide variety of pencils and pens, or with a brush and paint for an alternative approach to mark making (*see* 'Tools for drawing and marking the lino directly', Chapter Eight). Modern lino alternatives are not as accommodating to mark up as artist lino and most will not take carbon paper marks or paint.

Finally, I prefer to use artist lino as it is made from a combination of natural, renewable materials. Lino contains no plastic and waste lino can be composted down. Just make sure you clean it and remove the ink before adding it to your compost bin, and be patient as it does take time.

## TRADITIONAL ARTIST LINO: THE HARDENING PROCESS

Artist lino has a lifespan. Over time the linseed will harden and lose its flexibility and the material will become increasingly difficult to cut. This process takes at least a year or two depending on the lino's exposure to sunlight and heat. It is not advisable to wrap lino in plastic to extend its life, but storing it in a cool dark place is helpful.

Lino that is beginning to harden can be improved by brushing a coat or two of linseed oil onto the lino's surface and leaving it for a couple of days to be absorbed, helping to restore some flexibility. However, this treatment isn't a miracle cure and will not help once lino has hardened completely. It is best to throw the lino away at that point. It will be almost impossible to use and will make cutting dangerous. Any lino sold to you in a hardened condition should be returned to the supplier.

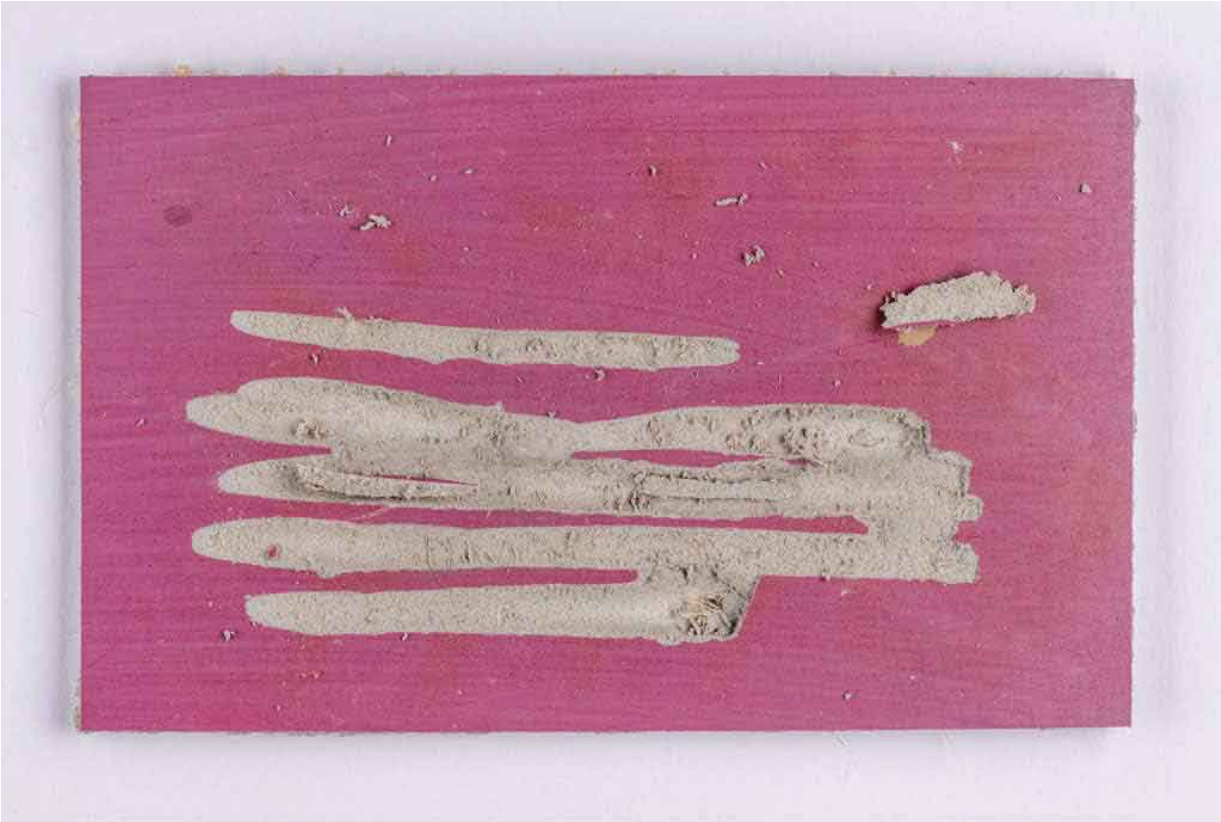
A linocut print by artist James Boswell, the original owner of the cutting tools I now use. The block dates back to 1952 and was printed again for this book with great success.

The hardening process doesn't affect the printing of the lino, only the cutting. This is worth remembering if you make a one-colour linocut or a multi block print. I recently printed up a lino block dating from 1952 with no problem at all, getting excellent results.

Always check the lino really has permanently hardened before throwing it away. All lino, however fresh, is naturally stiffer and harder to cut in cold weather. Test how your lino behaves when it is at a comfortable room temperature. Fresh lino should be nice and flexible, slightly bendy and easily cut with sharp tools. It is also likely to smell pleasantly of linseed oil.

## Warming lino for easier cutting

Lino that is fresh and suitable for cutting can be warmed for easier cutting if it has been stiffened by cold temperature. Do try to avoid all but the gentlest approach to warming and only do it when really necessary. Over-heating the lino will cause it to expand and become crumbly and very brittle, making it hard to cut cleanly and impossible to use for fine detail. Ideally, all you should do is to return it gently to a comfortable room temperature and maintain that temperature while you cut. This is not always easy in a cold studio, so warming gently by a radiator or in an airing cupboard works well. If you feel the need to apply heat more directly, careful use of a hairdryer on a low setting is an option. Remember, lino that remains very hard even when warm will never soften and should be discarded.



This lino has been overheated by placing it directly on a very hot radiator. It is crumbling away where it has been cut.

## BUYING AND STORING LINO FOR PRINTING

## Buying lino

Buy your artist lino from a reliable source with a good turnover. Artist lino does deteriorate and harden very slowly over time so it needs to be supplied while soft and fresh. I always buy lino on a roll and cut it to an assortment of sizes, but I tend to work with large sizes and get through a roll of lino quickly. You may prefer to work with pre-cut sizes, especially if you are only likely to use a small amount of lino occasionally. Alternatively, you might club together with another artist or art group and share a roll. That way you can cut it to the sizes you want.

Lino is sometimes sold already mounted onto a thick backing block (*see* 'Preparing lino for cutting and printing', this chapter). The wooden block is there to raise the lino to type height for using in a traditional letterpress printing press. It is more expensive bought this way and will take up more space when stored, but is convenient if you want to use the lino at type height in a press and don't want to worry about mounting your own lino or adapting the bed of the press.

## Storing lino

Once you have bought your lino, check the surface. Lino sometimes comes with tiny crumbs stuck to the surface. These can be scraped off with a thumbnail. This is best done as a routine before the lino is stored. If you forget to do it later, these crumbs might remain until the printing stage and show up as annoying dots of colour surrounded by a tiny halo of unprinted paper in your print. It's very unlikely that any crumbs you find will have impressed the surface of your lino to the point of damaging it, but return the lino to the shop if your crumb check reveals any dents likely to affect your printing.

Always check your lino for surface crumbs; I use my fingertips to feel for crumbs as they can be hard to spot by eye. I use the edge of my thumbnail to remove them without marking the lino.

Store your lino stacked flat. Avoid leaning it up on its side or laying it over any objects. It is a fluid material and will slump and curve over time when given the opportunity. If your lino has distorted through careless storage, lay it flat and put a weight on top. It will flatten again, quicker in warm temperatures than cold.

If you buy lino on a roll, it is best unrolled and left to flatten out before storing as a flat sheet. If the lino is very cold, allow it to warm to room temperature before unrolling or it may crack. If you leave lino in a roll, it will remain curved and probably need flattening just when you want to use it. You'll also need to remember to check it for crumbs whenever you need it. I tend to cut my roll of lino, check, sand and stain it, then store it in large sheets after it has spent a couple of days flattening on the studio floor.

## Cutting lino to size

Lino is easy to cut using a sharp craft knife (boxcutter) and a heavy metal straight edge ruler. (Always use a proper cutting mat and an appropriate straight edge or safety ruler.)

Once the lino has been lightly scored with a knife, the piece can be folded back and will snap along the scored line.

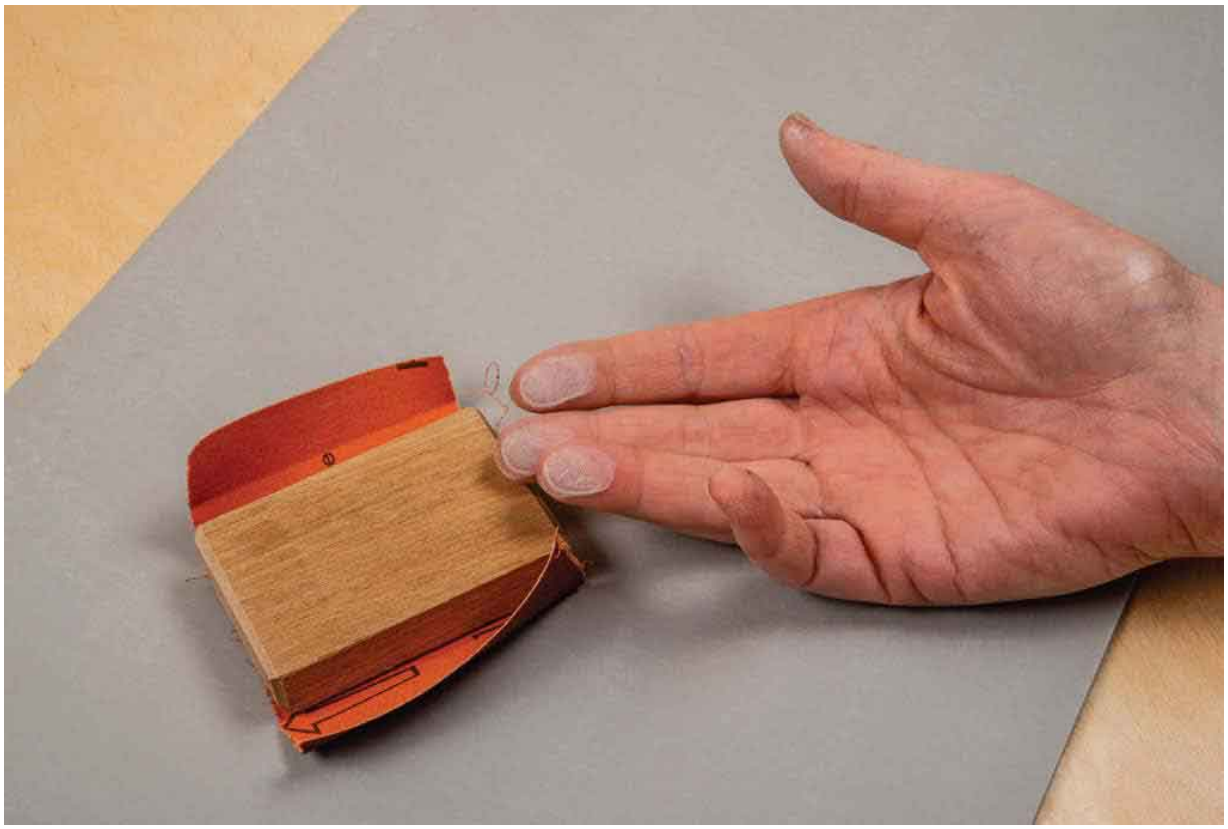
- Mark out your measurements on the lino's surface.
- Using the straight edge as a guide, run your knife along your marks to score the surface of the lino rather than make a cut. There is no need to score the lino deeply.
- Pick up your lino and bend it gently along the length of your score mark. The lino will crack neatly along the score line.
- Use your knife to cut through the jute backing to complete the process.

## PREPARING LINO FOR CUTTING AND PRINTING

In addition to checking the lino's surface for crumbs with your thumbnail, there are some other things you can do to prepare the lino and make it easier to cut and print.

## Sanding and degreasing

Given that lino was designed first and foremost as a hardy, dirt-repellent flooring, it fights inking a little at first, especially with water based inks. Degreasing the lino will help, as will a light sanding.



A light sanding appears invisible on the lino itself, but will key the surface of the lino, making it easier to ink.

To degrease the lino with water, wipe the surface with a soapy cloth followed by a damp one. Alternatively use a cloth with white spirit (mineral spirits/mineral turpentine). This step can be postponed until after sanding, when it will also remove any sanding dust from the lino.

Giving the lino a light sanding with fine sandpaper will key its surface slightly and improve inking. You need a fine sandpaper,

wrapping it around a block will make sanding easier. Give the lino a brief sanding. The plan is to key the entire surface lightly. Aim for good coverage and no visual change to the lino. All you should see is a light dust on your fingertips when you run them over the lino after sanding. Finish by wiping the lino down with a damp cloth to remove any dust, or by degreasing the lino, and allow to dry.

Sanding can be done at any point before using. However, doing your sanding along with checking for crumbs when you first get your lino means one less thing to do when you are ready to print. It’s also much easier to sand a large piece of lino before it is cut up into smaller pieces.

## Staining

Staining the surface of the lino with colour before you begin cutting is entirely optional, but can be helpful. Adding a new surface colour provides a contrast with the inside of the lino as you cut, making it much easier to see where you are cutting.

Lino that has been degreased and sanded receives a stain of magenta-coloured oil based printing ink that has been diluted with white spirit into a thin wash.

It is important to choose your stain carefully and make sure it doesn't affect the finished print. I prefer to use oil based printing ink to make my stain. Even if you too plan on using oil based ink to stain your lino, take the time to do some tests on scrap lino to check your particular ink dries well, is durable and doesn't transfer to a test print. *See* 'Inks' for details about the inks mentioned in this section.

Since the stain needs time to set and its durability is improved by a long drying time, you may like to stain your lino in advance, along with your sanding and crumb check. If you leave staining until later, it should still be done before transferring your design to the lino or drawing directly onto the lino, as applying the stain can remove your marks.

### Oil based ink

Oil based ink makes a good stain in my opinion. It is sensible to use a colour that dries well and provides a good contrast without being

so dark that it hides carbon or pencil marks. I use a magenta, which dilutes to a pale bright wash.

Staining the lino with ink can look dramatic and seem risky, but provided it is done carefully there is no transfer to the finished print.

- Dilute the printing ink with white spirit at whatever ratio works for you, I aim for about 1:10, and rub the mixture thoroughly into the surface of the lino with a rag.
- Leave to dry and fix for at least a couple of hours, preferably overnight. The longer the better.
- Once completely dry, the lino is ready to receive your design.
- Once the stain and any carbon drawing have set properly (*see* 'Transferring the tracing onto lino with carbon paper', Chapter Eight) wipe the lino with white spirit to remove any excess stain plus any excess colour from the carbon paper. The aim here is to wipe away any excess, not scrub away the stain and any carbon marks, so go gently.
- Always take a tester print on cheap paper to check for any transfer when you begin printing.

**Water based ink**

I would proceed with caution when using water based ink for staining lino. It will stain lino, but is very easily lifted and blended into water based printing ink during printing, and it may affect the print colour. It is also far more likely to lift off when you clean the block between layers. However, you could apply a wipe of diluted ink each time you have a new layer to cut, wiping the block clean again with a damp cloth before you go to print.

As an experiment, I used Indian ink to stain the block prior to printing. Although the Indian ink was left to dry thoroughly, the water based yellow printing ink rehydrated it and the Indian ink is appearing on the print through the yellow ink. Cleaning up also proved very messy.

The exception to this rule is using a water based ink to stain lino which is then printed in oil based ink and cleaned with white spirit. The stain will not transfer from the block or affect the print, but it will be less durable than an oil based stain.

**Safe wash ink**

This makes a less durable stain than traditional oil based ink and tends to wear off more easily. However, it is less likely to lift and mix with the printing ink than water based inks. If you are cleaning with water, I would advise wiping the stain on for cutting and cleaning off before each printing, the same as for water based inks. If you are using safe wash ink with white spirit, it may survive cleaning better as a stain and is unlikely to transfer to the print.

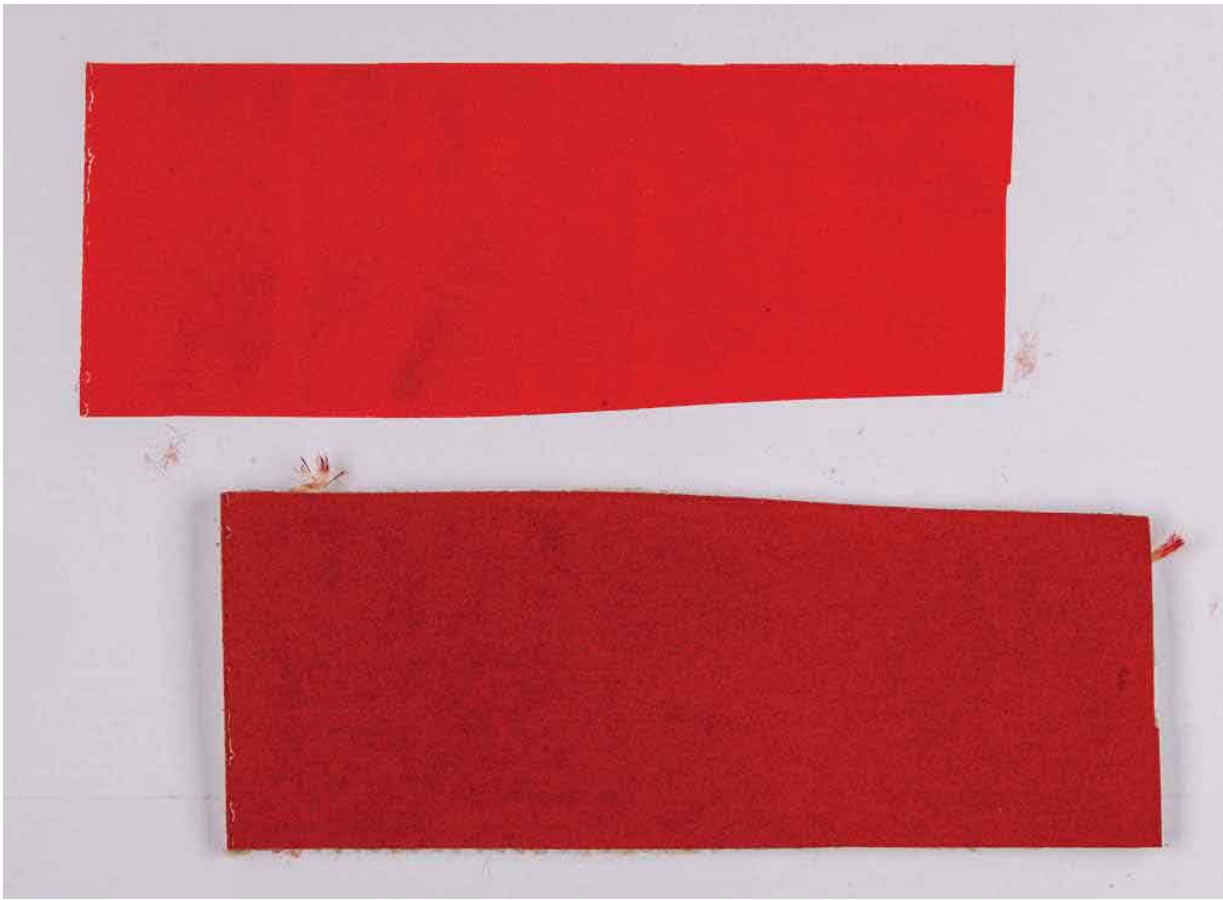
### Acrylic paint, Indian ink and other alternatives

There are many materials that suggest themselves for staining lino. If you think you have found a good one, run a test.

- Check the stain is durable and that it doesn’t affect any drawing or carbon marks you need to make on the lino.
- Make sure it doesn’t rub off on your hands and isn’t removed by whatever method you use to clean the lino between printing.
- Make sure the stain doesn’t lift off and mix with your printing ink. Check that any transfer to your paper when printing is temporary and can be resolved by making a couple of trash prints before the real printing begins.

## Trimming jute threads from the lino’s backing

The jute fabric used to back the lino is naturally very fibrous and loosely woven. At the edges of cut lino, jute is inclined to fray. Whole threads can come away and little tufts appear. Any stray hairs, threads or tufts will pick up printing ink very readily and dirty the margins of your prints. Always take a knife or sharp scissors and trim the jute threads at the edges of your lino before you print. This is best done when you are ready to use a block, as handling will cause the jute to fray. Trimming in advance is usually time wasted as more trimming is likely to be needed once you start handling the lino for printing.



A print is easily spoilt by ink catching on stray jute threads, so trim the lino before using and keep checking for stray threads as you print.

Check the edges of your lino regularly during your printmaking. Threads can lift at any time. These are easily removed, but can ruin a print if left unnoticed. Trim away any jute threads carefully when the lino is free of ink. It can be tempting to snip off hairs from an inked block, but they inevitably catch and stick onto the block ready to spoil the impression. Also, check and trim any print areas where you have cut the lino deeply enough that the jute shows though to the surface.

## MOUNTING YOUR LINO BLOCK TO A BACKING BOARD

There are two reasons for mounting your lino to a board of some sort: one is ease of handling; the other is to aid registration while printing.

Lino is a stable material and can be cut and printed without mounting to a backing. However, you may find that a backing board will make the lino easier to handle, especially as you cut more of the material away as your print progresses. A stiff backing keeps the lino stable throughout cutting and printing and will prevent the possibility of the lino edges curling. It can also make it easier to ink up the lino and wipe it clean.

If you are merely mounting your lino to stabilize it and the backing plays no part in aligning the lino for printing (making a one colour print for example), the size and height of your backing is relatively unimportant as long as the backing is the same size or bigger than your lino.

If you need to attach a backing to your lino to fit it into a press, a jig or tabletop frame, you will have to consider height and accurate sizing. Using one layer of material attached to the lino as a backing and adding other layers as packing to raise the lino to the right height for printing is a good solution, allowing you to use thinner material that is easy to cut accurately.

Using a press where the lino must sit at type height (*see* ‘Printing on a presss’) requires a very thick backing block. In this instance consider using two blocks: a basic thick block that can be used repeatedly as a foundation, with thinner secondary blocks attached to individual pieces of lino when needed. Using two blocks like this means your mounted lino blocks will be lighter, easier to store and to handle.

## Materials and methods for backing lino

Lino can be backed with a variety of materials and that backing can be stuck to the lino permanently or temporarily. The main requirement is that the backing is stiff enough to be useful. Strong cardboard, card or mountboard will work. Thin MDF, ply, hardboard or fibreboard are more solid options if you have the means to cut them to size. Whatever backing you choose, avoid saturating it with water or white spirit when you are cleaning (*see* ‘Cleaning inks’) as backing materials may warp, swell or fall apart if they get wet.

A range of materials such as card, mountboard or MDF will work as backing for lino and can be temporarily or permanently attached. Try to keep backing boards as dry as possible when cleaning the lino and, like the lino itself, always avoid immersing them in water.

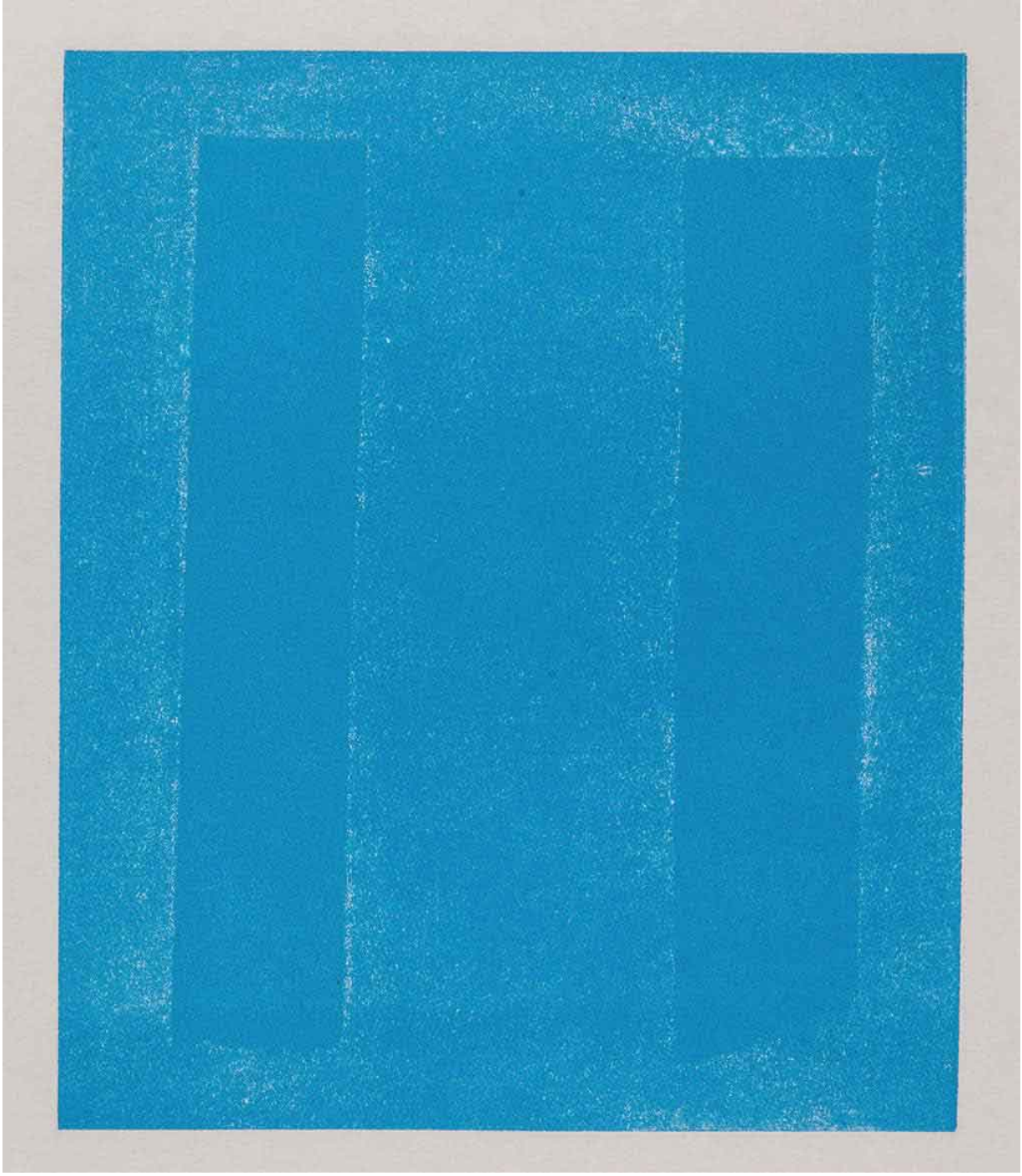
## Permanent backing

If backing is permanently attached to the lino, it cannot be reused once the lino block is redundant. On the plus side, a permanent fixing means your lino is completely safe from moving during use so you won't run the risk of losing your registration during printing. I prefer permanent backing for my work and for teaching.

Glue will fix the backing permanently. Carpet/cork tile adhesive works well. Apply your glue in a thin even layer to both your backing and lino, and bring together carefully. Apply pressure to bond the lino to the backing, either by standing on the block or using a press. Wipe away any excess glue from the sides before it dries. Try to avoid applying your glue in patches as there is a danger this will cause uneven pressure when printing, leading to corresponding darker patches of ink on your print.

**Temporary backing**

A temporary fixing allows you to reuse your backing material, but always remember to draw a careful line around your lino marking its position on your backing. With a temporary fixing, there is always a chance that the block will move. Your print may be spoilt if you can’t return it to the right place to line up your print.



The sturdy carpet tape attaching the lino to its backing board is revealed under the pressure of a printing press. An uneven application of glue could also result in darker patches in this way.

Double sided tape is the simplest temporary backing, provided it is strong. Carpet tapes often work well. This method is best used

when hand printing. The force of a press can make it hard to remove old tape to reuse the backing. The press can also cause the taped areas to show as dark lines on the print as the tape acts as an extra layer of packing in the printing, especially if the tape is sturdy.

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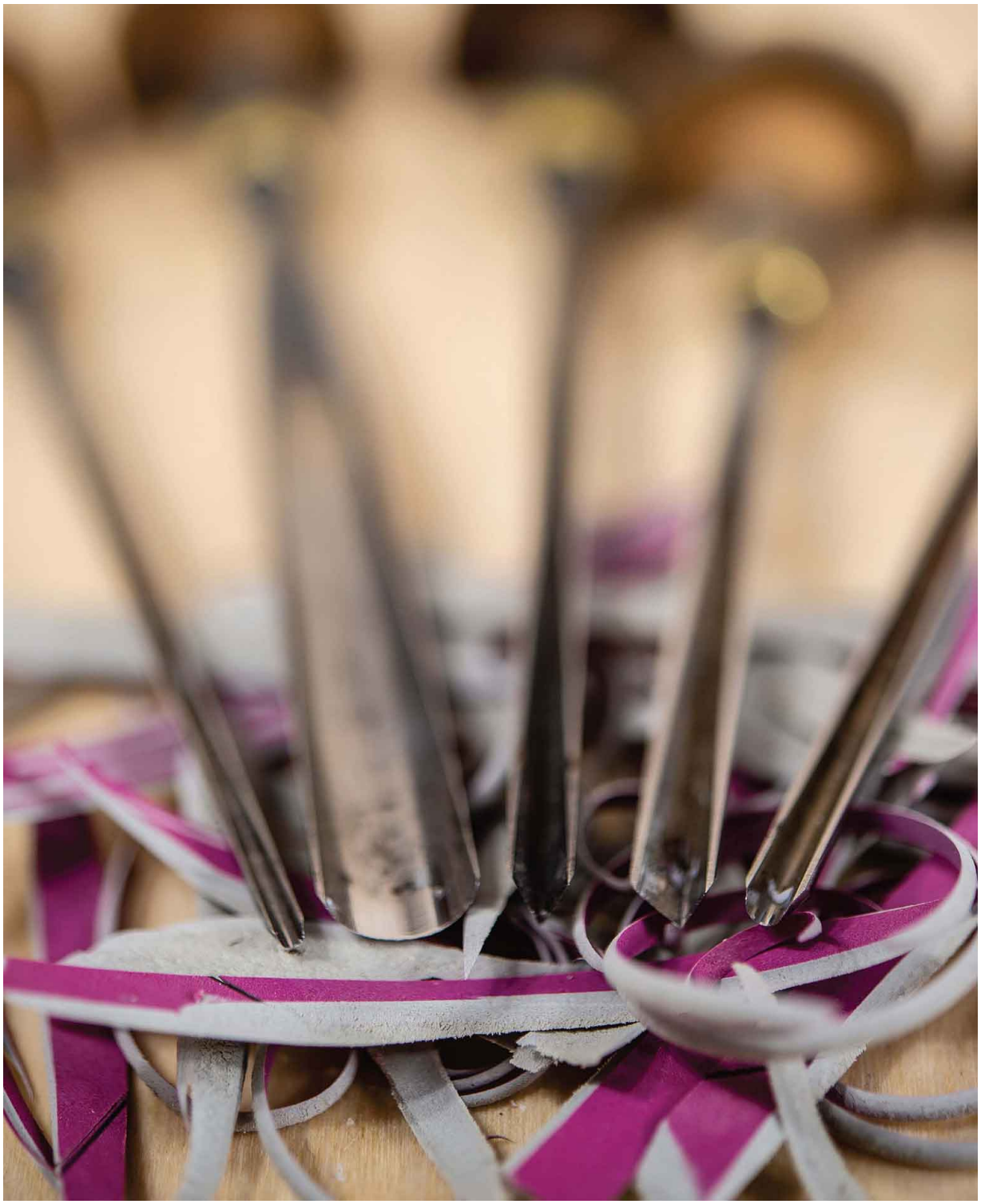
CHAPTER 2

# Cutting Tools

Tools designed for cutting lino come in a wide range of prices, qualities and sizes. Tools are available individually or in sets and come with handles made from wood or plastic.

Some of the cutting tools available are primarily designed to cut woodblocks. These mostly come from Japan, where there is a long history of woodblock printmaking. These woodblock tools also cut lino beautifully and I have included them in this section. It should be noted that while woodblock tools work very well for cutting soft, smooth lino, not all linocut tools have strong enough blades to cut wood, which can be a harder and more demanding material.



My traditional lino cutting tools amid a pile of cuttings. Always be careful to check for hidden tools before you dispose of your cuttings!

My cutting tools: a mix of old and new, Western and Japanese tools. These are all used for linocut and stored in a leather lined box along with my *kiridashi* knife (shown resting on the box) for cutting paper.

## Blade shapes

While cutting tools come with a range of handles and in many sizes, broadly speaking there are four basic shapes of blade. The flat chisel and the knife mentioned are designed for woodblock cutting and are included in most Japanese cutting tool sets.

U shape gouge: the blade cuts a smooth consistent groove the width of the tool. U shape gouges come in widths of a millimetre right up to wide shallow gouges 2cm across or more. Rocking the tool while cutting will create a zigzag line.

V shape: the blade can be used to make a variety of cuts depending on the cutting angle. Lines cut with a V gouge vary in width depending on the depth of the cut.

Flat chisel: of little use for cutting the surface of the lino, flat chisel blades are excellent for removing ridges left by U and V gouges and for clearing away large areas of lino. They can also be used to bevel the edges of lino (*see* ‘Pressure and registration’).

Knife: this blade is called a *hangi-to* and is designed for Japanese woodblock. It makes the precise sloping outline cuts needed for that printmaking method. The tool is intended to be held in the fist and its handle should be cut to fit your hand before use (*see* ‘The *hangi-to* knife’). Once mastered, it is a useful tool for precision cutting.

## Handle shapes

Cutting tools come with two basic handle shapes: long pencil-shaped handles and curved mushroom-shaped handles. (All-in-one tools are the exception with their pear-shaped handles, discussed separately.) Both shapes work well, with the tool butting into the palm of the hand securely for cutting. The shape of the tool's handle is not indicative of the tool's quality and the type of handle shape you choose is entirely a matter of personal preference. I work with a mix of handle shapes, preferring to choose tools by blade rather than by handle.

Tools come with a variety of handles in two basic shapes: curved mushroom or pencil-shaped.

These cheap and cheerful all-in-one tools are a useful purchase for testing the waters of printmaking with minimal financial outlay.

A budget set of Japanese tools intended for woodblock, which also work well for lino. I use these for teaching workshops. Note the *hangi-to* knife in the box at the top of the picture; its handle will need cutting down to fit the user's hand before it can be used comfortably.

Tool handles can be made of plastic or wood. The handle's material, rather than its shape, is a better reflection of the tool's quality. There are certainly budget cutting tools with wooden handles, but no premium professional cutting tools with plastic handles. While there is nothing wrong with plastic handles, wood is a more pleasing material. There is great pleasure in using wooden handled tools that are gradually polished and smoothed by the printmaker's hand over the course of many years' use.

## All-in-one tool

All-in-one cutting tools have a single handle and a range of blades. I find the sets with a hollow, pear-shaped wooden handle and a stick to push out the blades for changing to be the best type of all-in-one cutting tool. They generally come with five blades made from stamped metal: a knife-type blade, three U gouges and a V tool.

While I have seen more costly versions, a basic wooden handled set will cost ten pounds or less. These sets are perfectly adequate if you have never tried lino and want to make a first print to see if you enjoy the process before you invest much money. Move on from using an all-in-one set to tools with individual handles if you decide to continue printmaking. Using multiple blades with one handle quickly becomes a bore. It will encourage you to stick to a preferred blade, making the same cuts, inhibiting your experiments with a range of different blades and mark making.

## Budget tools

At the budget end of the market, tools usually come in sets. Cheaper tools usually have blades that are stamped out of sheet steel. The steel is likely to be fairly low grade and will receive less attention at the sharpening stage of manufacture than more expensive tools. Of all the budget tool shapes, V gouges are the most likely to suffer and may be difficult to use with accuracy. The lower grade of steel is also likely to require more maintenance to keep blades sharp.

If you do want to start with a budget set, I recommend looking for a Japanese brand as Japanese tools will be designed for woodcut and will necessarily be stronger than those intended for lino. Avoid the unbelievably cheap cutting tools, usually packaged as a large variety set. These are sometimes sold as ‘hobby tools’ in discount shops and their blade quality is related directly to their bargain basement price.

## Mid-range tools

Mid-range tools, like professional cutting tools, usually have forged blades. They are often excellent value for money with well-made, decent blades. They will require less attention than budget tools and will be easier to sharpen when you do need to work on them. Power Grip, a Japanese brand intended for woodcut, is my favourite of the mid-range brands. I regularly use them as part of my collection of tools. In the West they are usually supplied in sets, but they are also available singly through Japanese suppliers in a much wider range of sizes.

Mid-range tools are often very good value for money and may meet all your printmaking needs without the expense of professional tools. (Photo: Handprinted)

## Professional quality tools

Top quality cutting tools are expensive, but they will last a lifetime and beyond. My own set of mushroom-handled lino cutting tools date back to the 1930s and were inherited from my husband's artist grandfather, via my illustrator mother-in-law. They are still going strong. Some tools are rather shorter than others thanks to years of sharpening, but all are still cutting perfectly.

These tools were made in 1930 and are now cutting lino for a third generation of artist printmakers.

Premium quality tools tend to be forged from a combination of two types of steel. This is because steel, broadly speaking, has two opposing characteristics. Steel can be hard and brittle, ideal for holding a sharp cutting edge, but prone to damage. Alternatively, steel can be softer and more flexible which makes it less inclined to break, but quicker to blunt. Combining two types of steel with these different characteristics makes for the best of both worlds.

Pfeil and Flexcut are examples of premium tools made in the West. Like the professional grade Japanese woodblock cutting tools, premium Western made tools are of excellent quality with great strength and durability. All these tools have forged and laminated blades. Premium Japanese tools have wooden pencil-shaped handles that open up to allow the printmaker to move the blade down the tool as it is worn away by cutting and sharpening.

# BUYING TOOLS

Beginning with a basic set of cutting tools and gradually adding tools over time is a good way to build up a personal collection. By adding to your collection as your cutting style and skills develop, you will build up a set of tools that suit your particular needs, spending money on tools you really want to use.

Premium cutting tools are an investment. They perform superbly and will last a lifetime or more if well maintained. On the left are premium Japanese cutting tools and on the right Pfeil lino tools.

With most budget and mid-range tools coming in sets, you may not be able to begin your collection with individual tools. Look for a set that gives you at least one V tool and two U gouges in wide and narrow widths. If it is a Japanese set (remember if you are buying budget, Japanese tools tend to be stronger for the price) it is likely to include a knife and a flat chisel. With a basic set like this, you will soon find out which tools you favour and what additions would be

helpful. As you improve, you will have the experience to upgrade your tools as budget allows. Investing in the perfect professional tool is far less daunting done one at a time and once you know your cutting style.

### Buying second hand

You may have the opportunity to buy second hand tools. I would only pursue this option if the tools are in good condition and of premium quality. You will also need the sharpening skills to remedy any problems. Even if the tools seem good (do check the construction is solid as well as the condition of the blades) don't be blinded by the opportunity. Do the tools match your cutting style and needs, and will you really use them? Tools that require serious restoration are a project in themselves, taking time and skill. A rusty old set of budget tools is certainly more trouble than it is worth, unless transforming old tools is your passion.

## IMPROVISED TOOLS – USE WITH CARE!

Any sharp blade can be used to cut lino, providing you can ensure your safety (*see* also 'Cutting techniques', this chapter). Many printmakers like to use a scalpel or knife for lines and detail work. A woodworker's flat chisel, especially the short-handled versions known as butt chisels, can be useful if you regularly clear large areas of lino and need a bigger tool for removing ridges. Wire brushes, bradawls, scrapers and sandpaper can all be used to change the surface of the lino.

Some printmakers use a Dremel Multi Tool with its various heads for cutting. If you venture down this path, you will need a mask and safety goggles. Materials like coarse sandpaper that rub and abrade the surface of the lino can be effective for adding texture. It is also possible to use caustic soda to etch the surface of lino. There are detailed guides on the internet for caustic soda etching with lino. If you do try working with caustic soda, always wear protective gloves, mask and goggles and work outside or with very good ventilation. Keep children and pets at a safe distance; it is very dangerous stuff!

# STORING AND PROTECTING TOOLS

Sharp cutting blades are delicate. They are easily damaged and need to be treated with care to keep them in good working condition. Always keep your tools clean and dry. An occasional wipe with a touch of oil will keep rust at bay. Like Japanese printmakers, I use a cloth with a few drops of camellia oil for this purpose. Camellia oil is made from the seeds of *camellia oleifera*, in the tea family, and is an effective protection against rust.

Both this felt lined box and tool roll are homemade and designed to protect delicate tools in transit.

If you want to keep tools in a box, make sure it is lined with soft felt or leather and your tools can't roll around freely. If tools can move in the box, protect each tool's blade with a cork or with plastic

tubing. A sturdy tool roll made of thick canvas, felt or leather also works well. The tools sit in individual pockets in a roll, keeping the blades separate. An open roll holds tools safely when working and, when the roll is folded and rolled, the tools are protected for storage and transport.

It is also important that you keep yourself safe. Get into the habit of putting your tools down in the same safe spot while you are working. Tools left at random on your work surface can cut you unexpectedly if you brush against them, or be swept into the bin along with your cuttings and lost. Be careful tools can’t roll off your bench and be damaged by falling or worse, impale you as they fall.

## HONING AND SHARPENING

Keeping the blades of your cutting tools in perfect condition is crucial. A sharp tool will enable you to work to the very best of your ability in comfort. Blunt tools have the exact opposite effect. Many people who believe they struggle through lack of skill and ability find their talent for lino remarkably improved by properly sharpened tools.

Using a permanent pen to colour in exactly where the tool needs work will guide you as you learn to hone or sharpen. Here the bevel that needs work is coloured blue.

Both these blades are sharp, but the tool on the left has a satin surface from sharpening and will blunt quickly. The tool on the right is honed and ready to use.

There are two levels of blade care: honing and sharpening. Honing is a refining process, polishing already sharp blades. Sharpening is a more aggressive approach for reconditioning blades, returning them to sharpness. Take the ‘little and often’ approach to both honing and sharpening. It is much easier to make regular small adjustments to tools, and better for your cutting, than letting tools go blunt to the point of needing major work. Always be very careful when honing and sharpening tools, especially when checking for burrs during sharpening. It is so easy to cut yourself.

Learning to hone and sharpen tools takes practice, but it is time well invested and all part of being a printmaker. In addition to conditioning your tools, you may also need to repair a chip or dent in the blade to return your tool to perfect condition. It is both possible and affordable to send tools away for sharpening, a service usually offered by specialist printmaking suppliers. However, sub-contracting your sharpening in this way will leave you without tools for a time. It

is also tempting to delay sending tools until they are desperately in need of attention and long past cutting at their best. If you can, it is better by far to learn the skills that keep your tools sharp and at hand for whenever you need them.

## Honing (stropping)

This polishing technique, known as honing or stropping, will keep sharp tools in good condition day-to-day for fairly long periods. It is important to hone new tools before you use them. Most cutting tools are supplied sharpened, but not honed. A new un-honed tool will cut marvellously well, but will blunt quickly. Honing the new blade before cutting will greatly prolong the initial performance of the tool. The process is a gentle one and you will not be raising a burr on the inside of the metal. You are working on the outside edge of the tool blade only, on the bevelled part where the tool changes angle at its tip.

On the left, a homemade leather strop and some honing paste; on the top right a commercial slip strop with shaped grooves and a solid stick of polishing compound. Bottom right, a scrap of leather perfect for a strop. It is the suede underside that is used for stropping, not the smoother side.

Smear a pea size lump of paste, or rub your stick, onto the leather at the top of your strop. Have a scrap of lino to test your tool on as you hone. Position your tool so the outside part of the blade, where it changes angle, is snug against the leather.

Pull the tool towards you firmly several times to polish the bevel (don’t rub back and forth: you will cut into the leather). Work on curved U tools in stages; centre and then sides. V tools should be honed one side at a time. Be careful to maintain the correct angle with all the tools, especially the V tool.

To hone your tools, you will need a piece of leather for a strop and some fine grade honing paste. Commercial leather strops are available, either flat or shaped to fit the contours of cutting tools. A homemade strop is equally effective and cheap to make. Part of a wide sturdy belt, or leather handbag from a charity shop stuck to a board will work very well. Honing paste, sometimes called stropping paste or honing compound, is a slightly abrasive paste that comes in a variety of grades. Fine grade works well on small tools. The product also comes in stick form, called polishing compound, and performs the same task.

Over time honing will cease to be effective, as the tool will begin to round over. When that happens, you will find that no amount of honing will make the tool perform well. At this stage you will need to sharpen the tool and then hone before using.

## Sharpening surfaces

Aim at having two or three sharpening surfaces from coarse to fine. A coarse surface will shape the tool, removing dents and chips. The medium and fine grades will sharpen the tool and the honing leather will give a final polish if needed. You will also need a small slip stone for removing the burr from the inside of your tools. It's helpful to have a piece of non-slip matting to place under your stones while you work.

There are a variety of surfaces available: water stone, oil stone, diamond stone and lapping film and all have their pros and cons. Avoid high speed grinding wheels. These will generate heat and are likely to damage delicate tools.

On the left are my synthetic water stone and a *nagura* stone. On the right are a natural stone and stone powder for fine polishing.

I use two diamond stones, one coarse (600 grit) and one medium (1200 grit). My finest surface is a good quality synthetic water stone (4000 grit). I also have a *nagura* stone (mud-stone) and a slip stone for removing burrs. The *nagura* stone is a soft stone that is first soaked in water and then rubbed on the water stone to make a slurry to improve sharpening. The slip stone also needs soaking before use. I am using my finer grade diamond stone in the sharpening sequences along with the slip stone.

In addition to these stones, I own a natural water stone from Japan. It is extremely smooth and hard. I use it in place of a leather strop for polishing my tools. It is used with a small dusting of stone powder and just the top of the stone is damped when needed, it does not need soaking.

**Water stones and oil stones**

As their name suggests, these stones work with water or with oil. Never mix the two types. Oil stones cannot be used alongside diamond stones or lapping film, both of which require water. I prefer water stones and diamond stones, but if you wish to use oil stones, use a light mineral oil or a honing oil designed for use with oil stones. Wipe the stone down with WD-40 after use to prevent it from clogging up with oil, as this will damage its performance.

Water stones are the traditional choice for many printmakers, especially in Japan. They produce an excellent result, but require maintenance. They need to be soaked for about half an hour before use, along with the *nagura* stone. The pair are used together, with the *nagura* stone creating a fine slurry of mud on the water stone. Be careful with water stones, if you slip your tools can dig into and damage the surface. Over time, stones will develop grooves from wear and will require flattening using a coarser grade stone. Water stones should always be dried thoroughly before putting away or they will go mouldy.

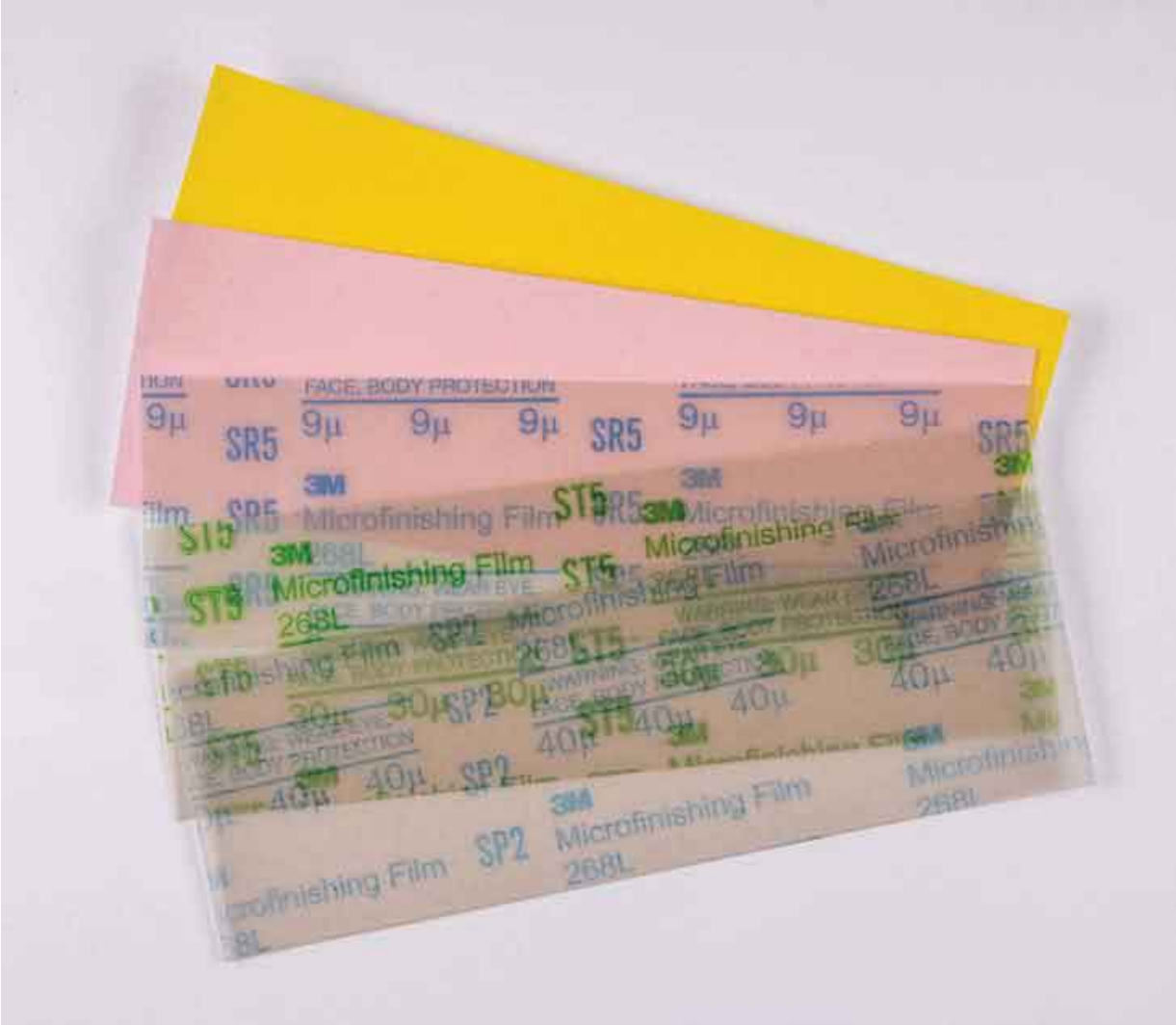
**Diamond stones**

These are made from metal or plastic with a coating of industrial diamond and are a good all-round option. They are very low maintenance. They don’t need soaking, and are easily wiped dry after use. They will stay flat and do not develop grooves through wear, nor will they be damaged if your tool slips. They are used with just a splash of water, or they can be used with a *nagura* stone if you prefer.

My diamond stones have seen a lot of use and still work perfectly with very little maintenance required to keep them in excellent condition.

## Lapping film

This is an inexpensive film available in assorted grades that must be stuck to completely flat glass or tile for use. Films will need replacing regularly and, to avoid damaging the film, tools must be sharpened on the pull only (as with stropping on leather). The film is used with a splash of water. Sample packs of mixed grades are available from specialist suppliers.




Lapping film is an inexpensive option but will need to be replaced regularly.

## HOW TO SHARPEN

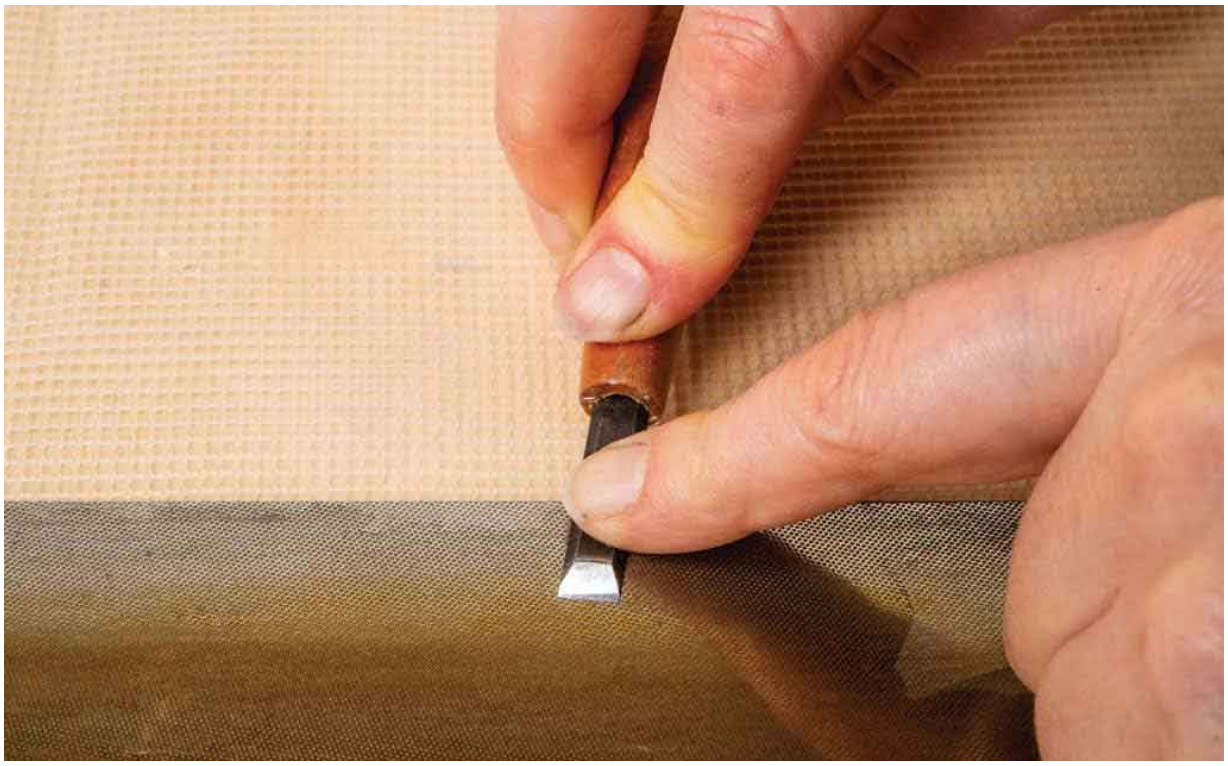
If your tool is chipped or damaged, you will need to begin sharpening with your coarsest grade of stone, re-shaping the tool, before moving on to sharpening with your medium and fine stones, finishing by honing. If the blade is just in need of sharpening, you can skip your coarse stone, beginning instead with the medium stone and then the fine stone. After sharpening you should always hone the tools to a polished finish. Keep some scrap lino handy to test your blades as you work.

Sharpening is more aggressive than honing and is likely to raise a burr. A burr is a small fold of metal raised on the opposite side of the edge you are sharpening. You will be able feel a burr as a small rough ridge if you check the tool with your fingertips.

# Knife/flat chisel

Position: have the stone long side perpendicular to you. Position the blade so that the bevel lies flat against the stone. As you become more experienced, you will recognize the ‘sweet spot’ where each tool’s blade is balanced perfectly for sharpening and will glide easily over the stone. Here a chisel is shown.

Sharpen: move the blade up and down the stone, keeping the angle steady. Try not to rock the blade as you go. Check your progress after a minute or so and stop when the tool is sharp and the blade appears uniform.



Remove the burr: feel if there is a burr on the reverse of the tool. If needed, remove the burr by placing the tool burr side down on the stone for a couple of strokes. Check the tool is smooth to finish, or move on to a finer stone.

# U gouge

Position: have the stone long side perpendicular to you and position the central part of the U in the middle of the stone. The bevel of the U tool is curved across its width, but the length of the bevel from front to back should remain flat against the stone.

Sharpen: keeping the length of the bevel flat to the stone, move it back and forth, rotating your wrist from side to side at the same time. The angle of the tool should remain steady, holding the bevel flat along the length, while your rotating movement sharpens the tool around the width of the curve.

Remove the burr: use the edge of the slipstone to remove any burr from the inside of the tool.

# V gouge

Position: have the stone long side perpendicular to you. Treat a V tool as a pair of chisels for sharpening, positioning either side flat to the stone in turn. It is crucial that the tool is evenly sharpened on both sides and the angle of the V remains the same or the tool may no longer cut successfully.

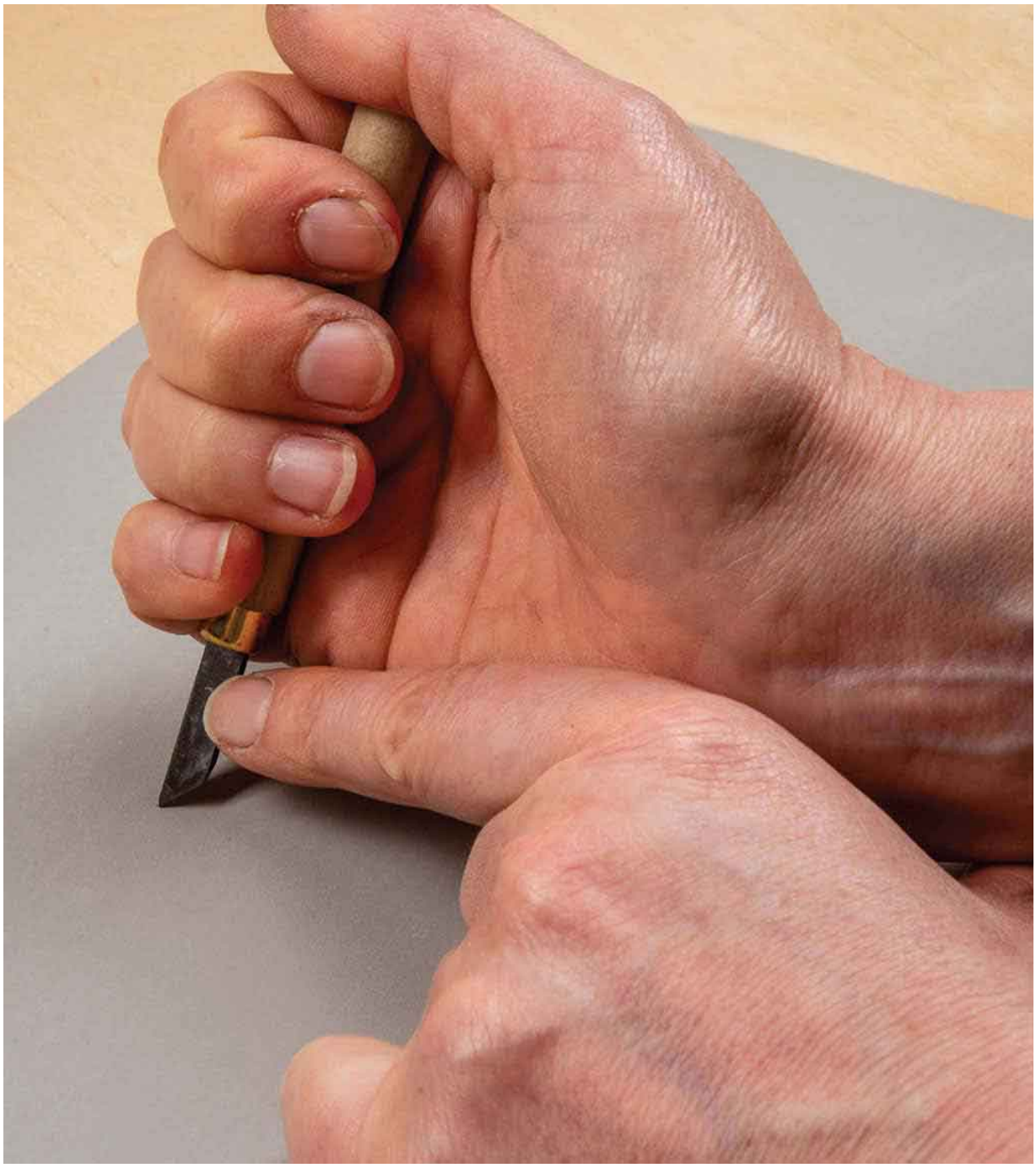
Sharpen: work on one side, then the other in turn. Work slowly and evenly, examining and testing the tool as you go and ensuring that both sides meet accurately at the centre of the V.

Remove the burr: use the narrow edge of the slipstone to remove any burr from the inside of the tool.

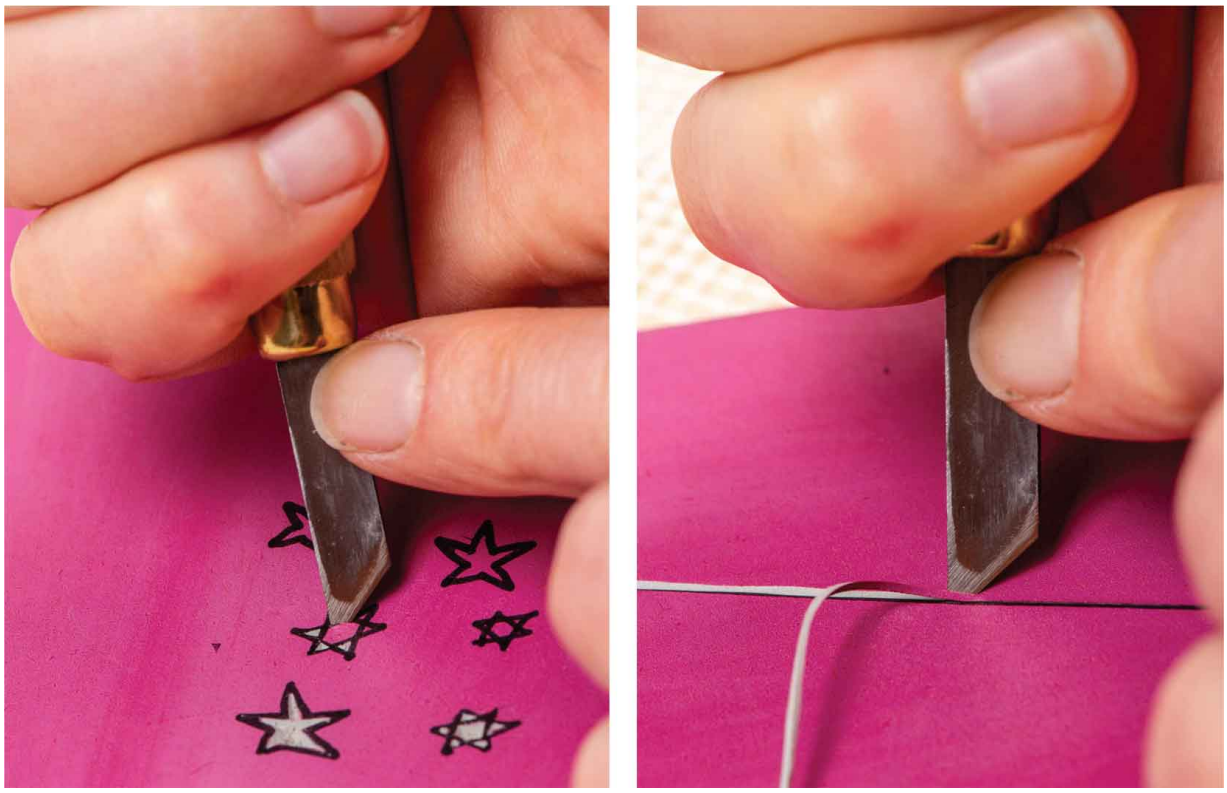
## THE *HANGI-TO* KNIFE

If you have bought a set of Japanese tools, chances are they will contain a tool with a sloping knife blade. This particular tool is called a *hangi-to*. These knives are used by Japanese artists and artisans to cut detail and outlines when working on blocks for their spectacular woodblock prints. *Hangi-to* knives in sets are for right-handed users. Left-handed *hangi-to* knives can be bought as individual tools.

These two *hangi-to* knives are from identical sets. After purchase, the bottom tool has been cut down to fit the user’s hand.



The *hangi-to* knife is intended to be adjusted to fit the user’s hand. The shank should sit comfortably below your fist and your thumb sits on the top of the tool. Note how my left hand acts as a stabilizer for the tool.



The *hangi-to* knife cuts on the pull towards you and only the tip of the blade is used. Although unfamiliar to hold at first, after a little practice the knife is excellent for cutting tiny details or straight lines.

The blade cuts on the pull with the tool held in the fist. The knife handle is intended to be cut down to fit the user's hand to make this comfortable. The knife should be trimmed so that it can sit in your fist with the shank of the blade below your hand and your thumb resting comfortably on the top of the tool.

When held in the fist, the blade of the tool lies parallel with the width of your hand, bevelled edge towards your hand, flat edge facing outwards. The long tip points toward your fingers and the short side toward your wrist. The knife cuts with the tip of the blade. Cut with the knife at a slight angle to the lino. As you get used to handling it, you will find a comfortable angle that suits your cutting.

There are videos on YouTube detailing how to hold and use this knife for Japanese woodblock work if you wish to see the knife in action. It is a marvellously precise tool once you get the measure of using it and I recommend it, especially for tiny cut outs and tight corners. It is also useful for cutting straight lines.

# COMFORT AND SAFETY

Always use a bench hook or a non-slip mat to prevent your lino from slipping while you cut. I prefer to use a mat made of non-slip material rather than a bench hook. The kind of material used for rug underlay or as a non-slip drawer lining is ideal. A non-slip mat makes it easy to turn your lino around as you work, holding it steady in whatever position you place it. That said, a non-slip mat may not work so well on very smooth or varnished surfaces. I have covered my studio worktops with cheap flooring vinyl for their protection and a non-slip mat works very well indeed with this kind of surface.

Using both hands to cut in this way is optional, but a good way of ensuring your safety. Whatever way you choose to cut, always keep both hands behind the blade.

Always keep both your hands behind your cutting tool when working. Do be aware of the position of your hands, especially if you are a beginner. Holding the lino down with your spare hand directly

in front of the cutting tool, as you might with a paper and pen, is almost instinctive and a recipe for disaster. Take it from someone who once put a tool straight through their thumb nail in this way. I soon learned the habit of resting the index finger of my non-dominant hand on the cutting tool as a stabilizer while I work, the weight of the hand holding down the lino. A position that is both good for my cutting and very safe.

Good lighting is essential and will make a world of difference to your cutting. Bright daylight is ideal if you have it. In my studio, which gets less natural light than I would like, I use LED top lighting that's designed for industrial warehouses. This provides a flood of bright light at a surprisingly affordable price and is available with daylight bulbs. A bright light that can be positioned accurately to give additional light, or throw a side light across the work, is also useful. Again, I rely on industrial lighting and use a builder's site light with a homemade stand. Rechargeable battery-operated site lights are available if you want to avoid trailing wires.

If you work with extremely fine detail, magnifying lenses can help. There is a range of products from spectacles, some with a range of insertable magnifying lenses, to visors and headsets that hold the lenses away from the eye. It is important that the lenses do not strain your eyes and that whatever design you use is comfortable to wear. Do take regular breaks and check with your optician if, like me, you regularly use magnifying lenses along with prescription glasses.

Cutting on a slope may be more comfortable for your back. Most people get a little sore when they first begin cutting lino. Hands, neck and shoulders may take time to become accustomed to the task, but if you have ongoing problems a slope may help. There are various adjustable tabletop slopes available if you don't want to make or improvise your own. Make sure your slope is stable and experiment until you have an angle that suits you. It is important to use a non-slip mat for safety. Remember that round handled tools will roll off at speed if you put them down on a slope.

## CUTTING TECHNIQUES

This section is intended to help with the mechanics of cutting lino. Part Two of this book gives pointers for drawing and design. Part Three illustrates various cutting effects and printing techniques for bringing a linocut to life. Nothing I suggest here is set in stone. Every printmaker works in a different way and you will, with time and practice, arrive at your own cutting style.

My own cutting set up includes a slope with a non-slip mat, my builder’s site light on its homemade stand and a visor with magnifying lenses.

## Taking a rubbing to check progress

Taking a rubbing from your lino as you cut is an easy and effective way of checking progress. A flimsy paper, like newsprint, works well for this. Use a graphite stick or wax crayon side-on to rub over the cut lino. Remember that you will still be looking at the image in reverse with a rubbing, but you will be able to see your cutting clearly. Do bear in mind that a rubbing may not look exactly the same as a finished print. A rubbing is pushed into all areas of the lino as you make it, so it is likely to look messier than the finished print. If in doubt about your cutting, take a test print rather than relying on a rubbing to make a final decision.

Checking progress with a rubbing will help with cutting and ensure you don’t miss any areas that need attention. A graphite stick and newsprint paper (pictured here) work well for this.

## The snap of the lino

Learn to exploit the way that lino snaps neatly at the point where you stop cutting. This characteristic is extremely helpful, especially when

you are working in tight spaces and need to remove material neatly. The more practice you have, the less you will need to think about this aspect of cutting. Eventually it becomes second nature to rely on the snap of the lino to help with your cutting. A word of caution: only expect the lino to break at the width of your cut with a gentle brush of your fingers, don’t try to force it or the lino may chip or tear.

## How deep to cut?

It is wrong to imagine that lino needs to be cut to a uniform depth whatever part of the design you are cutting. When cutting away a wide space, if you cut too shallow, there will be rogue inking when you come to print. Conversely, if you cut too deeply when working with fine detail it is easy to become clumsy and crumble the lino, ruining the chance of clean, crisp work. Lino can be cut right down to the jute backing, or cuts can be very shallow. Any cut deep enough to feel with your fingernail should print, provided you are careful with inking and printing the block.

In this partially cut print there is a considerable difference between the fine shallow cuts in the circle and the wide area cleared away to its right. The linear cuts of the grasses fall between the two in depth of cut.

The larger the area of lino to be cleared, the deeper and flatter you need to cut. This assumes that you want the print to be what I would call ‘clean’, without any random ridges or inking in the cut away areas (*see* ‘Chatter’, below).

Areas of detail, where much of the lino remains, are best cut fairly shallow. Fine detail does not require the same deep cutting needed to clear larger areas: where a lot of the lino still remains after cutting it acts as a support for the printing paper and prevents it from slumping into cut away areas. A shallower cut will give you more control when cutting detail, resulting in a smooth crisp finish for printing. If you find your cutting to be too shallow, go back and deepen any areas that need work. It is far better to work deeper in stages as needed while keeping detail intact, than to cut deep at the start and risk damaging the design.

These rules for deep or shallow cutting apply under all the cutting circumstances given below.

## Cutting away large areas

Clearing out an area of blank space is best done with as large a U gouge as you can work with in the space. The U will allow you to make uniform smooth cuts to clear the space. Next, either go back along the cuts a second time with the same tool, removing the ridges formed by your first pass, or use a flat chisel to remove the ridges if you have space to do so.

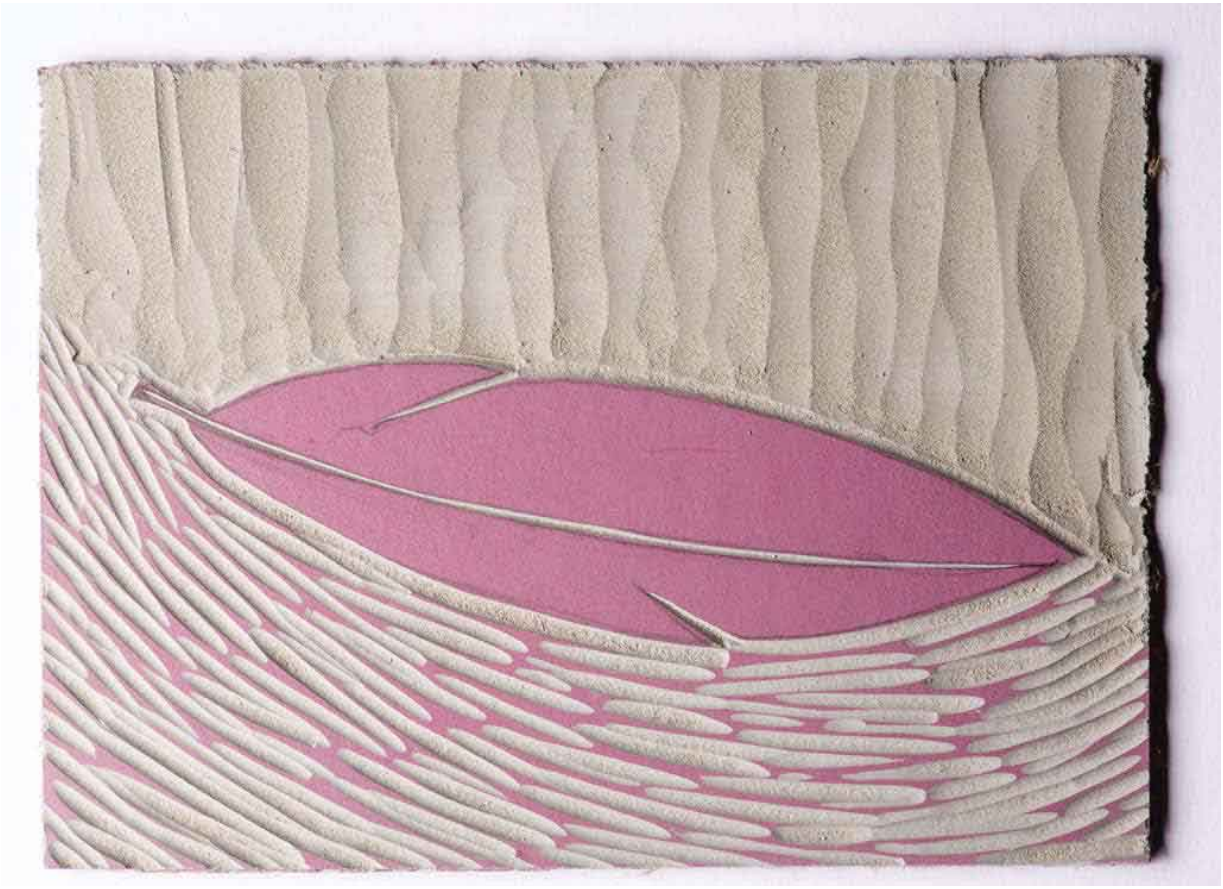
Here a series of cuts have already been made with a wide U tool to divide up a large area of lino. A second series of cuts are made with a flat chisel to remove the remaining lino, leaving a flat surface in the cut away area.

If you are clearing away up to the edge of the lino, make sure that you level off the material carefully. Edges are particularly susceptible to catching ink and printing. You are also likely to find the jute backing fraying as you work close to the edge, so do be careful to trim any fibres away to avoid catching ink. The same applies if you cut deeply enough to expose the jute in any other area. Remember to keep checking for stray fibres throughout the printing.

## Chatter

By ‘chatter’ I mean areas of random inking that appear in the finished print. Chatter happens in places where lino has been cut away, but ridges or little areas of lino remain. These pick up ink and

print. Chatter is not necessarily a mistake and can bring life and movement to a print. If you like the idea of having chatter in your work, be mindful when you are clearing away areas of lino and be sure to cut so that any ridges or patches left are sympathetic to your design. Experiment with chatter to see if you like it. It is better to leave some if you are in doubt. It's easily removed, but can't be added later.

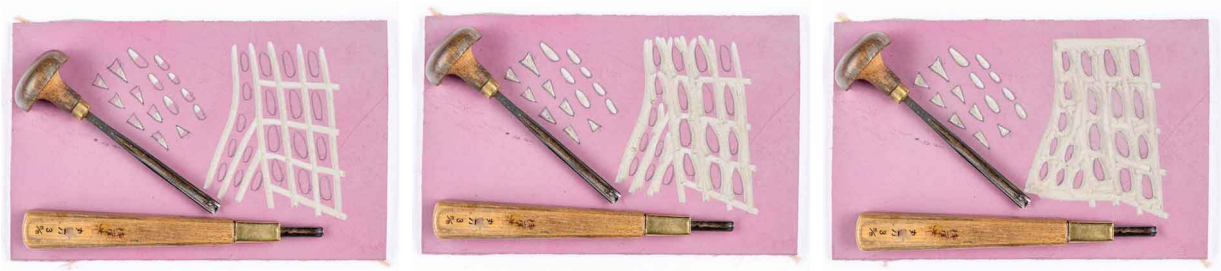


In this little sample the lino has been cleared flat at the top for clean printing. Below the feather, ridges remain which will pick up the ink and print to create a decorative 'chatter'.

Be careful with chatter, it needs balancing just like any other aspect of the print. While chatter may be the making of a print, too much chatter, or chatter in the wrong place can just end up looking clumsy. Fortunately, chatter is easy to edit after taking a test print. You can always cut some, or all of it away if it doesn't please you. It is best to check chatter with a test print rather than a rubbing. Rubbing inevitably produces more chatter than will appear in a print.

## Cutting detailed areas

When you are cutting an intricate pattern or a patch of detail, taking a slightly industrial approach can be helpful. Try breaking the cutting down into a series of cuts in one direction across the design, move the lino to another angle and then make the next series of cuts. This is a far more efficient way of working than fiddling around each detail in turn. I find it makes the cutting more fluid and consistent. It is also efficient when you need to use more than one cutting tool. Making all the cuts necessary with one type of tool and then coming back with another is far easier than the constant pick up, put down of tools needed when working on every detail individually.



Cutting a patterned area is quicker and easier when the cutting is done in a series of efficient moves as shown here, rather than fiddling around with each detail in turn.

If you have a large area of detail, it can be helpful to break it down into smaller sections for cutting, marking off areas with a pen or a strip of tape. This helps to keep the work consistent and makes it less likely that you'll miss any cutting.

## Cutting around a shape or along a line

U gouges are best for cutting around a shape or along a line. It may be tempting to try a narrow V gouge for accuracy, but it is far harder to make a clean smooth cut using the V tool in these circumstances. Better to use a U gouge that will give a uniform smooth channel that you can refine if needed.

U gouges are helpful for clearing around shapes and lines and using the side of the tool blade to shave off the lino in gradual stages after making the initial cut will allow you to refine your cutting with precision.

There's no need to make the perfect cut directly against your shape or line in one hit, unless you are really pushed for space. If you are concerned about cutting accurately, make an initial cut with a U tool a little away from your intended edge. Then, using your cut as a trench to guide the U tool, go back and use the side of the U tool to work up to the edge of your shape or your line at your own pace. Although I have the experience to cut against my lines with accuracy, this is an approach I still use if the lino is cold and a little stiff, or I have something particularly challenging to work on.

I prefer to cut along lines freehand with a U gouge, but you may like to cut along long lines using a knife or the *hangi-to* knife that comes with Japanese tool sets. If you use a knife or *hangi-to*, cutting at a slope in one direction along your line and then back in the opposite direction will remove a V-shaped sliver of lino. If you follow the rule that your first sloping cut is made with your cutting hand over the part of the lino that is going to remain behind and print, your blade will naturally slope away from the lino that is staying and into the area that is being removed. This will prevent you from undercutting your printing area, which would make it vulnerable to damage. If you intend to use a ruler to guide your knife, be careful to use a safety ruler and protect your fingers.

Once you have cut a trench around your shape or line and it is isolated, you can clear away the surrounding lino working outwards from the trench. Always work away from the parts that will print and into the 'dead space' that will be cleared. That way, any slips will be heading away from your work.

## Cutting inside a shape

Removing lino from inside a shape follows the same rules for cutting around the shape if you have the space to do it. You may need to use a much smaller U gouge, but the basic method of cutting a trench to protect the lino that is remaining and then clearing out the remaining lino towards the dead space applies. Work in stages, beginning with a shallower cut and cutting again if needed. This makes it easier to keep the edges of your shape neat. Remember that the interiors of shapes are unlikely to need very deep cutting as the paper will be supported by the surrounding lino.

Shapes with interior corners can either be managed by using a V tool held upright to stamp out the corner for a neat finish, or you can cut up to the corner with a U gouge and let the lino snap across your cut one way. Then cut towards the other side of the corner and tidy up.

Always try to work away from the lino you wish to remain to print and into the parts to be cleared out. Cutting a trench to protect the lino that remains will allow you to clear out the interior of shapes more easily.

If you are removing the interior of a shape and then cutting away all around it, to leave just an outline of lino left for printing, it is safer to cut the inside away first. Cut away the depth in stages as before inside and out. If you need to cut deeply on the outside of the shape for clean printing, do it in stages to protect the delicate edge of lino.

Removing the inside of tiny shapes is less daunting than it seems. Remember to exploit the snap of the lino to help. Look at the shape and choose a tool with a profile that matches the shape and size as closely as possible. Try to use as large a tool as you can for the shape to keep the cutting smooth.

For rounded and oval shapes, the U tool will be the best choice, while a V tool will come into its own for something angular. Tools can be held upright and used to stamp out shapes. With a little practice you can stamp a variety of starry shapes using a V tool and circles with a U tool. If you have lots of the same tiny shapes to clean out, follow the method for cutting detailed areas and do all cuts one way, and then the other.

## Cutting around marks made by a brush

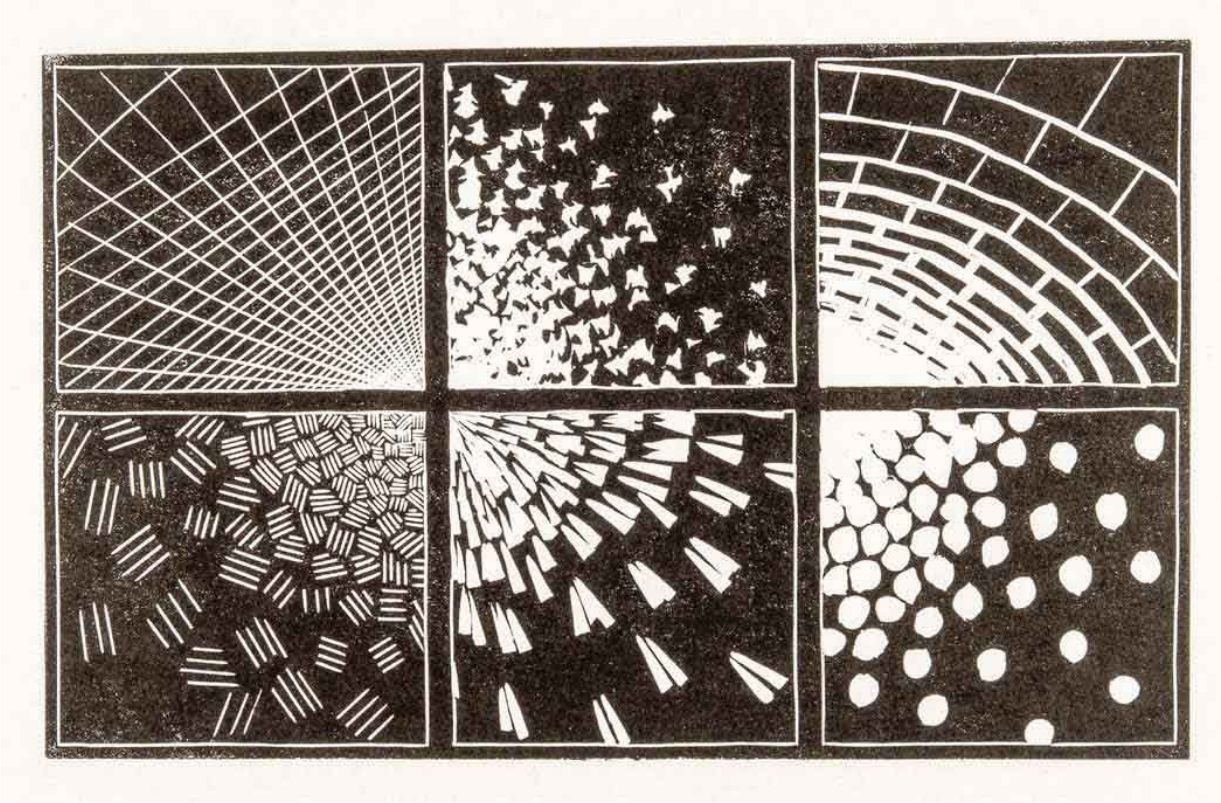
In Parts Two and Three of this book, I explain how lino can be cut to mimic brush marks by painting directly onto the lino and using the paint marks to act as your cutting guide. Cutting around or inside a brush mark does take time and care. The more meticulous your cutting, the looser and more convincing the printed brush mark is likely to be.

Cutting around a mark painted onto the lino in Indian ink with a brush. First a V tool is used to make a series of cuts around the brush stroke and then a wide U tool clears away the lino from the intricate shape. Remember to clean the lino before printing if you are concerned the brush mark will transfer to the finished print.

Don’t try to follow every tiny detail of the brush mark. Aim instead for catching the movement and feel of the stroke with as much detail as you can. Brush marks mimicked in lino tend to read better when you can see the change from the loaded brush at the beginning of the mark, to the empty brush at the end. A brush mark that begins heavy, where you are cutting around a solid shape, and ends scantily, where you are cutting lots of complex detail into the lino, will make more visual sense and tends to be more visually attractive than a brush mark of consistent weight.

## Cutting to create tone

Tone, the variation from dark to light, is important for giving depth, dimension, contrast and form. Learning to create tone through cutting is an important part of printmaking. In colour printing, while the different inks will do some of the work for you, understanding how to create tone through your cutting will significantly broaden your options for each print. Look closely at the work of lino artists specializing in one colour work, wood engravers, or old copper engravings of famous paintings made in black ink on white paper and you will see endless ways of creating tone through imaginative cutting. The more material that is cut away, the lighter the tone appears to be.



This sampler shows a variety of marks taking the image area from light to dark.

Creating tone through cutting can be harnessed in many ways and at any stage of a reduction print. How you choose to cut your tone, the weight and direction of the marks, and the pattern you create is very important. Think about the subject and the character of

the print and the story it is telling when you choose how to cut your tones.

### Different ways of cutting with the same tool

As touched on elsewhere, tools can be used to cut in a variety of ways depending on how you hold them. This is especially true of V tools, which can create a fluid line moving from thick to thin depending on the angle of the blade as you move it through the lino. Using tools as stamps and cutting with the edges of a tool can create interesting effects in themselves, or may simply be helpful when cutting normally.

It is possible to get some interesting effects by rocking tools as you cut. Only try this with sturdy tools as anything small could snap. I find the best results come from using wider, flatter U gouges for this kind of cutting.

## TIDYING UP

It always pays to go back over the lino for a final check after cutting. There will inevitably be a few things to sort out and tidy up. Taking a test print will help until you get used to spotting corrections. Check for high points, especially at the outside edge of any corners and at the very edge of the lino. If you have any isolated line work, check that the lino is cut away cleanly beside your lines and you haven't left any little shelves of lino that might print as a double line. If you have chatter, test print to see if it works, or needs editing. As always, check for jute fibres.

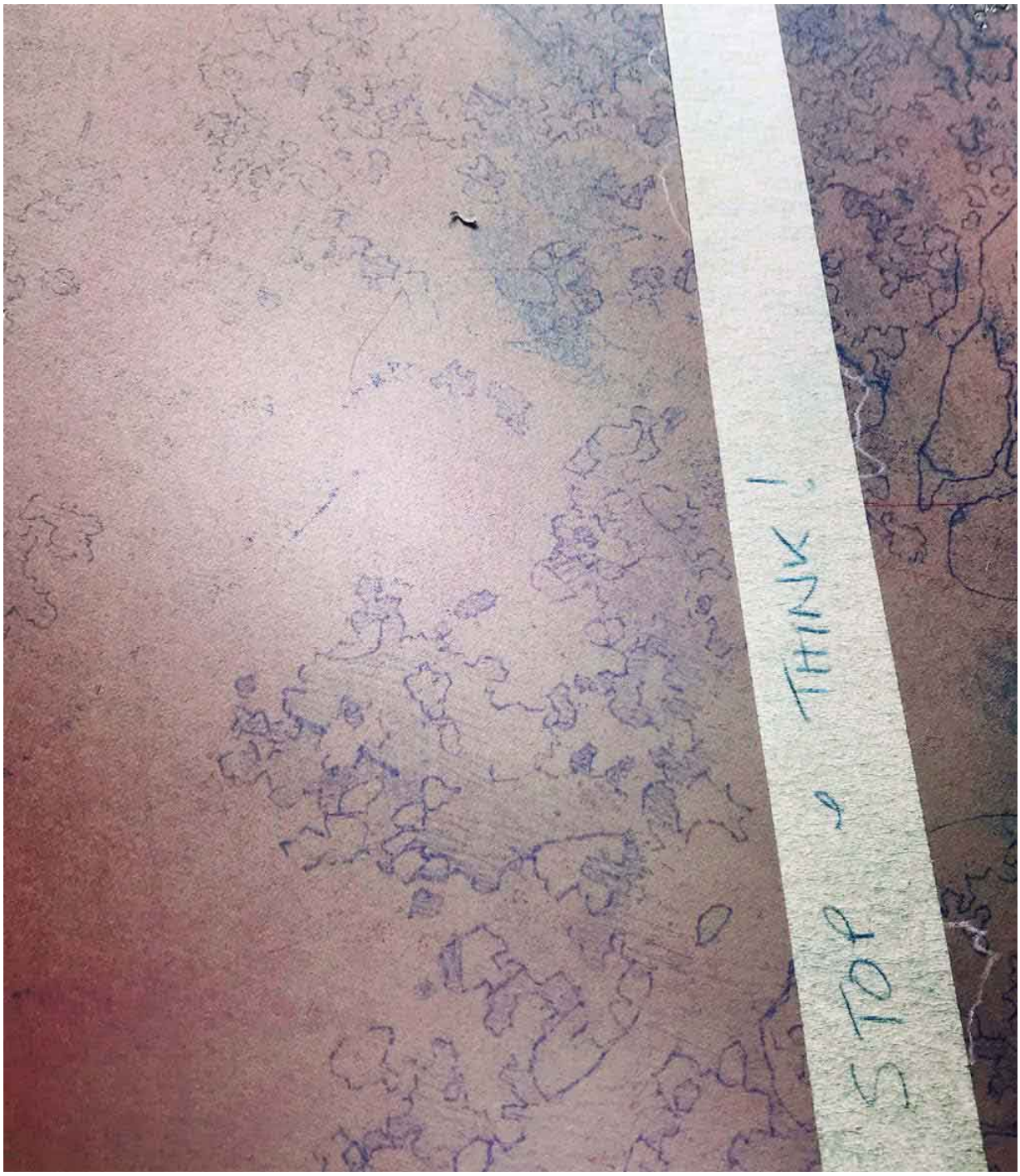
### A final brush off

Cutting lino inevitably creates waste. When you finish cutting, your block will be full of crumbs and dust as well as little scraps of lino. Have a brush handy to give the block a good brushing down before you start printing. A nailbrush works well. If you have a vacuum cleaner to hand, or are in a studio with access to a compressed air gun, make good use of them and be really thorough. Any detritus left behind can get onto the roller as you ink up and will spoil the

printing. Once your ink is contaminated with lino scraps and crumbs, there’s nothing to be done but to start again, wasting the ink.

## TAKING TIME AND CARE

Taking time and care over cutting really does show in the finished print. Paying attention to the small details when cutting will make a big difference to the end result. A lot of my prints look as though the lines and marks were dashed off in moments. The fact is, the scribblier and looser the line and the splashier the brush marks are in my work, the more time and care the blocks take to cut.




It never hurts to add a reminder to take care when cutting a particularly complex area.

While cutting skills obviously improve with practice, I think an inexperienced printmaker who cuts with focus is likely to get a better result than a printmaker who can’t be bothered to cut with care.

Hopefully, like most printmakers I know, you will love cutting and find it addictive rather than a bore.

Perhaps the biggest giveaway is when a printmaker begins to cut the lino in a certain way and gradually loses enthusiasm and energy, allowing the cutting to become increasingly clumsy and slapdash. When you first start cutting lino, you will lack the experience to calculate just how much time and effort different approaches to cutting will require. Do expect a few prints where the full horror of your commitment dawns shortly after you start cutting! You will speed up and you'll learn what approach suits you best, as well as learning some cunning ways to simplify a cutting plan mid-cut without compromising your print.

## TROUBLESHOOTING

It's a horrible feeling to realize that you have cut the wrong part of your lino. There are a couple of measures that may prevent an accident. Colouring in the bits that are to go or to stay can help, provided you are consistent and understand exactly what your shading represents. Another approach is to stick tape over precious areas to remind yourself to pay attention. I often stick tape with 'Do Not Cut' written on it across my work. I just wish the tape was available ready printed.

Inevitably you will cut some lino away by mistake and with reduction printing it may happen at any stage of making the print. The best solution is to adapt your ideas and make the mistake into part of the work. If you see a mistake less as a catastrophe and more as a challenge, it can often move the work along and the print will remain a success. It can even improve things. The important thing is to be flexible and imaginative. The more experienced you become, the less likely you are to mis-cut and, when you do go wrong, it will be easier to come up with increasingly effective work-arounds.

It is possible to stick lino back down into place and I have done this using an epoxy glue on occasion. This really only works if the lino is still attached and can be coaxed back down into place, or if

you have the extraordinary luck to find the exact offcut among the waste. Unless you are able to stick the lino seamlessly back into place, you are likely to be left with the patch showing in the print. Sanding may help, but be careful not to sand any dips into your lino or those will show too.

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CHAPTER 3

# Paper

A wide variety of papers work well for lino printing and all printmakers have their personal favourites. This section explains what to look for in a printmaking paper for lino, how to work with your paper and good practice for drying, storing and presenting prints. There are printmakers working with lino who prefer to damp their paper for printing. I always print with dry paper and have no experience of this technique, so it is not a method covered in this book.

I inherited this antique plan chest; it arrived with some interesting papers still tucked inside.

## PERFORMANCE

There are many printmaking papers on the market that are suitable for linocut. There are also plenty of papers not specifically intended for relief printing that work well for the job. Provided any paper you use meets the basic properties needed for printing and performs well, the world of paper is yours to explore.

Aesthetics aside, printmaking paper has to stand up to the physical demands of the printing process. Among the range of papers that pass this first hurdle, there will be those that best suit the demands of your particular printing style. Your cutting technique, your choice of ink, how many layers you like to print, how thick or thin you like those layers to be, whether you print on a press or by hand will all influence your choice as of course will your personal taste and the subject matter of the print in hand.

## Physical demands of printing

Paper for printing needs to have a surface that remains intact and unblemished throughout printing. The paper's surface must absorb enough ink for the print to remain on the surface, keeping the printed areas perfectly intact. Too little absorbency and the ink can be repelled by the surface and slide, making it very difficult to make a successful print. Anyone who has tried to print a design onto card with a non-absorbent finish will recognize the problem. Conversely, the paper's surface must not be so absorbent that it will allow the ink to flow into the paper fibre and blur, leading to a fuzzy result (*see* 'Size', this chapter). Papers with loose fibres can pull apart when printed, spoiling the surface. They may also be prone to tear and are likely to shed fibre and dust into the printing ink.

Printing paper must be robust. It needs to be able to withstand repeated compression and wear. Papers printed on a press will receive higher pressure than those printed by hand, but that pressure will be consistent. Paper that is hand printed will receive lower pressure, but more wear. The action of hand printing will cause friction between the paper and burnishing tool and the pressure applied will be more random. This combination of friction and inconsistent pressure from hand printing will cause higher levels of wear on the paper than press printing (*see* 'Papers for hand printing', this chapter).

# PAPER WITH A LONG LIFESPAN

Printing paper should stand the test of time. Unless you are making prints that are intended to be thrown away, the paper they are printed on should last for as long as possible. It is worth remembering that even ephemeral prints for celebrations such as weddings or Christmas are often treasured by the recipients and may end up as part of your printmaking legacy! Certainly, any prints you sell should be printed on acid free conservation grade or archival grade paper. No client will be impressed by paper that quickly deteriorates and yellows.

## Acid free paper

Acids cause deterioration in paper. While there are natural acids in the environment, by far the biggest danger to the integrity of paper are acids within its composition. Lignin, found in wood pulp, is a particular problem. Newspapers printed onto cheap acidic wood pulp paper will yellow, curl and crumble away in a relatively short space of time.

BUCKS HERALD

If it's on it should be in

# LEISURE & LIFESTYLE

*Rough beauty of basket making*

PAGE 96

*Take a seat for the weird and wonderful*

PAGE 98

## Open house Bucks' finest art

BY ANDREW KAY

**Hundreds of Bucks artists will open their doors this week to run family workshops during the county's biggest free arts festival.**

Last year more than 36,000 Bucks residents tried things like painting, metal work, basket weaving, wood turning and making jewellery.

The event, which is now in its 26th year, is called Bucks Open Studios and this year more than 500 artists are getting involved at 150 venues.

Laura Boswell, a Winslow-based printmaker and joint chairman of Bucks Open Studios, said: "This year we have more participants, new entrants and more venues than ever before.

"Our county is simply brimming with talent and our local art and artists create a third of gross business turnover for Bucks. We really hope that people will visit the studios, talk to the artists and get a feel for the creativity, diversity, and innovation that are buzzing in Bucks.

"We also hope it will inspire people to have a go at visual art and just maybe find their own hidden talent."

Bucks Open Studios runs from Saturday June 9 until Sunday June 24.

Highlights include the Horizon textile group in Stone displaying their superb embroidery at 2 Portway, while raising money to buy wigs for those undergoing chemotherapy.

Stoke Mandeville's Obsidian Gallery will host paintings, sculptures and jewellery from 19 artists. The Gate on 10 will be showing their pastel work and oil paintings at the Holy Trinity church and hosting a special meet the artist event.

The Wendover-based Little Bird Gallery is displaying the unusual paintings of Jan Moore.

The Clare Foundation in Saunderton is showcasing the work of 30 artists, including Bierton photographer Danny Higgins.

For a list of all the exhibitions and workshops visit www.bucksopenstudios.org.uk

The team behind Bucks Open studios - international artist Laura Boswell and her husband Ben, who creates jewellery.

Picture by Jake McAuley

Some family history from nine years ago. The newspaper, already yellowed and brittle, will deteriorate and crumble away as time goes on.

Acid free papers are made using alkaline papermaking methods. If the paper contains wood pulp, the lignin is removed along with any other acids and sulphur. The resulting pulp making up the paper will be above 7 (neutral) on the pH scale (the measure of acid and alkaline). Look for paper that is above 7 pH. Papers described as ‘neutral pH’ are not the same as ‘acid free’ so always check to see they have suitable longevity.

Some acid free papers contain added buffers in the form of calcium carbonate. Buffering increases the paper’s alkaline reserve and gives the paper extra resilience to acids in the environment.

Conservation and archival grade acid free papers will contain buffers.

### Archival grade and conservation grade papers

To be considered archival or conservation quality, paper needs to be particularly stable and durable. There are no universal standards, but there are accepted properties. Archival and conservation grade papers are acid free and have strict limits on metallic content. They are also free of optical brighteners, an agent added to paper to make it appear whiter. Cotton rag paper, made from pure cotton pulp is considered the most durable paper and comes under the category of archival grade paper, also known as ‘museum grade’. Papers made from acid free buffered wood pulp are categorized as conservation grade. Either will give you a high-performance paper with a long lifespan suitable for sale or archiving.

## PAPER CHARACTERISTICS

### How thick?

The thickness of paper is described by its weight. In the UK and Europe this is usually expressed in grams per square metre. For reference, standard computer printer paper is usually about 80gsm. How heavy a paper you prefer to use is down to personal preference, but there are some practical considerations. While the points below shouldn’t deter you from working with a paper you enjoy, consider them when planning your project and factor in any extra care needed.

- How are you taking the impression? If you are working by hand, a heavy paper will require greater physical effort to print than a lighter weight paper (*see* ‘Papers for hand printing’, this chapter).
- If printed on a press, the thicker and softer printmaking papers tend to emboss under the pressure. This is a pleasing effect in the correct place, but care is needed to avoid the paper embossing in unwanted areas (*see* ‘Embossing’, Chapter Six).

- Very lightweight papers may cockle or distort under heavy layers of ink, especially with water based ink.
- Delicate papers can be tricky to handle and place accurately. Think about your registration system and how easy the paper will be to manage without damaging.

This linocut is printed on pale green handmade *Khandi* paper. Textured papers will give an interesting effect, but are less suited to prints with complex details.

## Surface texture

For a crisp detailed result, linocut is best printed onto paper with a smooth surface. A paper with a rough surface will give a much more textured and patchy result, with ink lying on the higher parts of the paper. This can lead to interesting creative effects where the print is designed to showcase the interaction of inking and paper, and fine detail isn't a factor.

Here are some of the terms for paper you may encounter:

*Hot pressed:* hot pressed paper is very smooth. It is passed through hot rollers to calender (compress) it during manufacturing. This type of finish will give the clearest result for fine detail work.

*Cold pressed/Not:* cold pressed paper is not as smooth as hot pressed and has a slight texture. It is passed through cold rollers. This paper is sometimes referred to as ‘not’ rather than ‘cold pressed’.
*Rough:* rough paper is pressed between cold rollers using felt blankets to create the rough surface texture. This paper is likely to be too textured to suit conventional linocut printing.
*Laid:* laid paper appears striped when held up to the light due to bands of thicker and thinner paper. This is due to parallel wires in the papermaking mould and the term refers to the body of the paper rather than the surface. A laid paper may affect prints due to its uneven surface.
*Wove:* this term refers to the manufacture of the paper, not the finished surface. Papers made using moulds or frames with a consistent fine mesh are known as wove. Wove paper is a uniform texture throughout and most printmaking papers fall into this category.

## Size

The absorbency of paper is controlled by the application of size. Size is a gluey substance consisting of gelatine or modified starches. As well as controlling absorbency, size bonds paper fibres together, increasing durability and resistance to surface wear. Paper without any size is called ‘waterleaf’. Blotting paper is a good example of a waterleaf paper; it is very absorbent and has a soft structure. It tears and pulls apart easily. When the paper is damp, the surface breaks down into little rolls if rubbed.

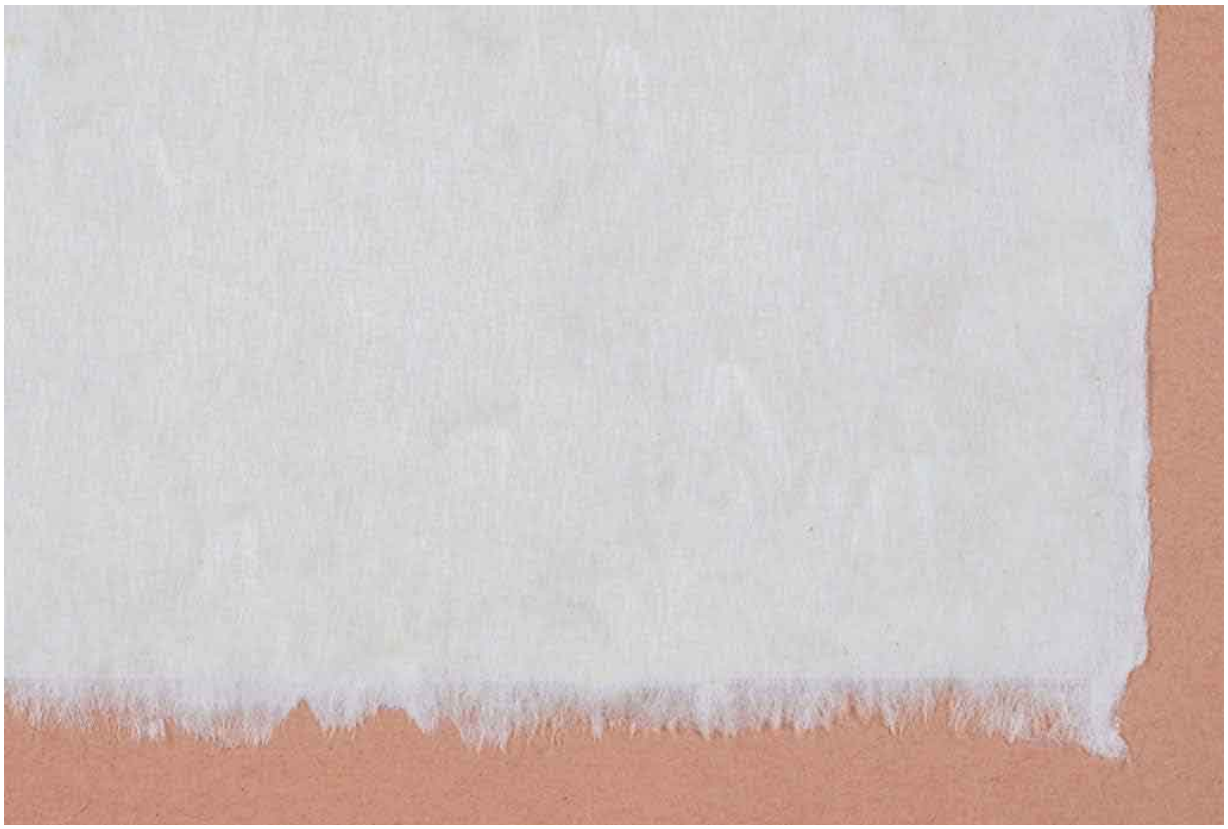
Papers can be internally sized and/or surface sized. Most papers are internally sized with the size added to the paper pulp during manufacture. Surface sizing can be applied to the paper during manufacture or after the paper is dried. This process is sometimes called ‘tub-sizing’ referring to the process of dipping paper into a tub of size to coat its surface. Size applied to the surface of the paper makes the surface durable, less absorbent and resistant to wear. Surfaced sized paper will be good for pen and ink drawing and rubbing out pencil lines will be easy.

Most printmaking papers are internally sized only and with a low level of size. They are referred to as ‘soft sized papers’ and are suited to accepting printing inks. If you try drawing with pen and ink, the paper will be very absorbent resulting in a fuzzy drawing. Using an eraser is likely to damage the paper’s surface.

## Watermarks

Some printmaking papers will have a watermark. Watermarks are created by a raised design in the body of the paper mould, or by impressing a stamp or roller into the paper during manufacture. The process creates an area of thinner paper in the shape of a pattern or text. Some watermarks are clearly visible, while some show up when the paper is held up to light. Watermarks are located at the edges of the paper. Be aware of prominent watermarks as they can be visible in the finished print. They are best trimmed away or avoided unless you actively factor their appearance into your design.

Some watermarks can be quite prominent and are best avoided unless you want to make them a part of your design.



This handmade Japanese *washi* has a natural deckle as a result of the paper making process.

## Deckled edges

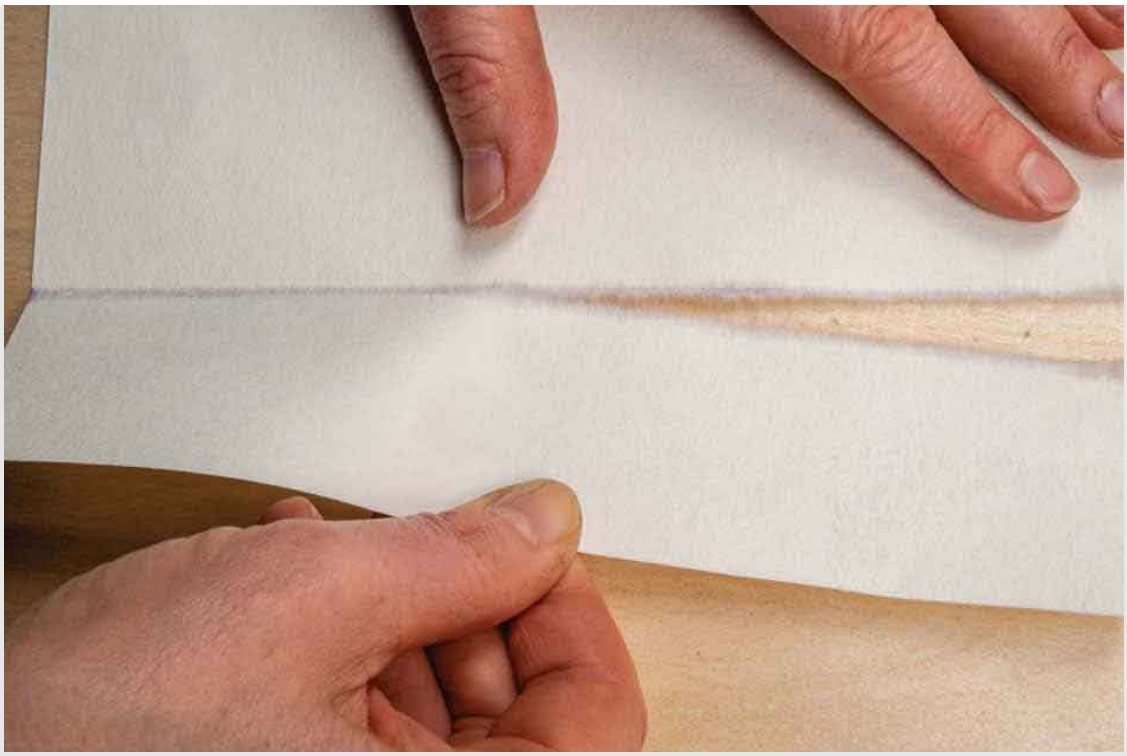
A deckle is a wooden frame used in hand papermaking and gives its name to the uneven feathered edges most often seen in handmade paper. Paper with this type of edge is referred to as ‘deckle edged’, or just as having a ‘deckle’. Some modern commercially made art papers come with a simulated deckled edge as a decorative feature.

Deckled edges can be an attractive part of your finished print if you wish to include them. If you want to feature the deckle, give some thought to the overall design of your print and how it will sit on the full sheet of paper. Remember that the edges of your paper around the print will have to remain pristine, as nothing will be trimmed away.

## WATER CUTTING FOR A DECKLED EFFECT

It is possible to create a mock deckled edge on paper using water. I find the best effects are achieved using Japanese *washi* papers with their naturally long fibres.

Using a ruler, run a brush dipped in water up and down against the straight edge until the water penetrates the paper and a narrow strip is saturated. Gently fold the paper along the wet strip to begin easing the fibres apart.



Hold one side of the saturated area down with a ruler or your hand and gently ease the paper apart with the other hand. Keep the paper low and as level as possible and apply a steady gentle pull. Resist the urge to lift one side of the paper as you would when tearing it.

## Handmade, mould-made and machine-made papers

### Handmade

Handmade papers are the most labour-intensive papers to make and the most expensive to buy. Each sheet is made individually by the papermaker and the paper will have four deckled edges. Handmade papers for printmaking will have two distinct sides and the smoother side will be better for conventional lino printing.

### Mould-made papers

These papers are usually made with the same high quality raw materials as handmade papers. Instead of being shaken by hand, the pulp is pumped into vat and coats a rotating cylinder mould. The

pulp coating is removed and laid out in a continuous process. These papers are also likely to have two different surfaces.

**Machine-made papers**

These are the cheapest papers to produce and are more likely to be made with lower grade raw materials than mould or handmade papers. That said, there are also plenty of excellent quality machine-made papers available. In this process pulp is added to water in lower concentrations than in the other two papermaking processes and the dilute mix is passed onto a fast-moving horizontal wire mesh. The pulp adheres to the mesh and the water is forced through. Papers made by this process often have the same surface finish on both sides.

## JAPANESE PAPERS

Japanese *washi* paper has properties that are very different from most Western papers. *Washi* is the general name for long-fibred Japanese paper made following traditional methods. *Washi* has many uses in Japan, from window coverings to bank notes, but printmaking has played a significant historical part in the development of *washi* paper.

An expert paper maker making *washi* paper by hand at the Awagami Paper Factory in Japan.

Papermaking has a long history in Japan as does woodblock printmaking. The demands placed on printmaking paper by the Japanese woodblock technique are very high. Japanese woodblock prints are printed by hand burnishing and those that include colour blocks have many more layers than most Western woodblock or lino prints. The Japanese woodblock method requires the printmaking paper to remain damp throughout the printing process and to withstand repeated hand rubbing. The paper must then dry with minimal and even shrinkage while the surface remains perfectly intact. In answer to these demands, Japanese papermakers created lightweight *washi* papers suitable for hand printing. These papers are extremely strong for their weight, have great wet strength and the paper fibres have a consistent distribution for even expansion and contraction between wet and dry states.

Japanese *washi* papers are quite different to Western paper in construction. Originally *washi* papers were made using plant fibres from *kozo* (paper mulberry), *gampi* or *mitsumata* plants. Modern papers may contain other fibres such as hemp, bamboo or cotton. These materials go through several stages of beating and cleaning to create long regular fibres suitable for papermaking. The fibres are suspended in water mixed with a mucilaginous liquid, rather than being pulped. During the papermaking process the fibres are shaken to lock them together, creating extremely strong and durable paper.

Historically, *washi* papers were handmade by individual papermakers to suit their clients. That is still true to an extent today. It is not unusual for artists in Japan to have a close relationship with a papermaker or specific paper distributor. Handmade *washi* is called by many names and is available in an impressive range of paper types and weights. It may be supplied sized, partially sized or unsized. Availability very much depends on the individual

papermaker and supplies to the West can be variable. If you want to use a handmade *washi*, it is best to test it thoroughly and to buy as much as you need for your project from the same batch. Handmade *washi* papers are among the most beautiful papers on the planet and a joy to use, but it will require some research on your part to find one to suit your needs.

Modern advances mean machines can mimic the process of making *washi* by hand to an extent. There are some very good machine-made Japanese *washi* papers on the market that are easily sourced outside Japan. These papers have the advantage of being consistently available in standard weights, colour shades and dimensions. The machine-made *washi* printmaking papers often come pre-sized ready for use and some are available in rolls as well as sheets.

## PAPERS FOR HAND PRINTING

Selecting the right paper is very important for all printmaking, but particularly when working by hand. The connection between your hand and the paper when hand printing is much more intimate and nuanced than that between paper and press. It is worth taking extra time testing and researching hand printing papers to find those that suit your taste and technique. Aim to find a paper that makes the most of the hand printing process while still being practical to use.

A lightweight, robust paper is a good choice for hand burnishing. Here I am using *Hosho* paper, a type of Japanese *washi*.

*Washi* papers are my first choice for hand printing. Printmaking *washi* has always been intended for hand burnishing rather than

press printing and the papers are very well suited to the job. *Washi* papers tend to be lightweight and have great strength and durability. If you prefer to use a Western paper instead of a *washi*, look for similar qualities of high strength in relation to weight. There are printmakers who work successfully with paper above 200gsm for hand printing, but I have always found papers between 80gsm to 190gsm to be more manageable. Japanese papers under 80gsm can work very well and are impressively durable. They do need careful handling to avoid the paper slumping into cut away areas or showing wear at the edges and corners if they are deckled.

You should also factor in your inking style when choosing a paper for hand printing. The lighter the weight of the paper, the more likely it is to distort or stretch (cockle) with heavy inking or if there are many layers of ink. If you like to print in this way, *washi* may have the advantage as it is designed to expand evenly in all directions, minimizing cockling. With a Western style paper, you might need to lean towards slightly heavier paper to avoid cockling. Having a choice of well-tested hand printing papers with differing characteristics is useful if you ink in differing ways depending on your project.

Using a sheet of baking parchment or thin plastic as a buffer to protect the back of the print while hand printing (*see* 'Pressure') will help avoid wear. It is not necessary to do this for all papers and a buffer sheet can be something of a barrier to feeling your way with the burnishing. However, there are times when it is necessary for protecting delicate papers, or to bring into play when a paper is getting tired in the later stages of printing.

## PAPER IN NATURAL SHADES

Papers come in a whole range of natural white shades from bright white through various creams and off-whites to pale buff, grey and greenish tones. The paper's shade will have an impact on your finished work. A print on bright white paper will have a different feel to one on an ivory or buff paper. It is worth running tests on different shades of paper using the same linocut and colour of ink. You may

find you feel very differently about a shade of paper once you see it printed up. Mostly this is a matter of taste, unless you work with transparent ink. If you rely on your paper to shine through the ink, bringing brightness and luminosity to the finished print, a bright white paper will give you the best effect.

Paper comes in a variety of natural shades, which can alter the appearance and feel of your finished print considerably.

# COLOURED PAPERS

Coloured papers will always have big impact on your print. Inks that appear opaque on white paper are more likely to appear more transparent on a strong coloured paper. They may change colour and tone. A bright red ink that looks scarlet printed on white paper may appear subdued on green paper, yellow ink may seem green on blue paper and so on. Printing pale colours or white onto dark papers can be very effective, but you may find you need to print two thin layers of ink to get a good result. Double printing in thin layers of ink, as opposed to printing a thicker single layer, allows you to compensate for the coloured paper while keeping your print crisp and accurate. Make sure you run plenty of colour tests on your paper so that you can make informed choices when mixing your inks.

Printing onto coloured papers is likely to have quite an impact on the colour of your printing ink.

## SUNDRY PAPERS

There are a few useful papers to have in the studio:

*Tracing Paper: see* 'Types of tracing paper' in Chapter Eight for details.
*Drawing paper:* cartridge paper or similar for sketches and design drawings. I have a good quality paper for my design drawings that will stand a lot of rubbing out and takes pen and pencil well, plus a cheaper paper for thumbnail sketching and planning.
*Computer printer paper:* inkjet paper is useful to have around for notes, quick sketches and for taking small proof prints.
*Proofing paper:* have some larger sheets of a budget paper for proof (test) prints. I use a budget drawing paper that works well. Newsprint can also be used for proofing, but is flimsy, will yellow quickly and is prone to tear with larger proof prints.
*Baking parchment:* this paper is useful as a buffer when hand printing. A sheet of baking parchment between the burnishing tool and the printing paper will protect the paper from wear.
*Newsprint:* this is unprinted newspaper and cheap to buy. I buy mine by the kilo as a packing material from a removals company. Useful for taking graphite rubbings and test proofs.
*Acid free tissue:* for wrapping around prints for delivery or storing prints.
*Paper trimmings:* keep printing paper trimmings unless they are absurdly small. Useful for checking colour mixes when preparing inks, or for saving colour samples. Also good for wiping off tools when cleaning up.
*Old newspapers:* for general cleaning up, and for dipping into while having a tea break.

## BUYING PAPER

Because paper is such a personal choice for the printmaker, it is best to try lots of papers and make your own decisions. Experimenting with a range of papers will give you an idea of the type of paper that

works well, suits your taste and that you will enjoy using. Once you have a broad idea of what you like, you can narrow down the choices of weight, shade and so on to suit your precise needs.

Printmaking suppliers will have a good range of printmaking papers and most sell sample packs, allowing you to run tests and experiment. In addition to printmaking suppliers, there are specialist papermakers and paper suppliers who sell their printmaking papers directly to the public. They are likely to supply sample packs and a wealth of information. Non-printmaking papers are always worth testing if they appeal, but test print them alongside one or two printmaking papers suited to linocut so that you have a benchmark for your tests.

## RAIDING THE STORE CUPBOARD

Experiment with papers you have to hand. Most artists enjoy paper and tend to amass a collection. You may well have some papers suited to lino printing. Unless you know exactly what paper you are using, treat these finds as non-archival and resist selling the results. Try to avoid falling too hard for a mystery paper or for one that's no longer available, as I did once with some vintage onion skin paper. You don't want to spend the rest of your days searching for a lost love.

## ESTABLISHING A STOCK OF PAPERS

All unfamiliar papers will need test printing before you can use them in earnest. Establishing a collection of thoroughly tested and reliable papers that suit your work is a sensible approach. Have one or two stock papers that you can buy in quantity and depend on for good results. Add in a few extra papers in smaller quantities to allow you to ring the changes if you have a project that suits a lighter or heavier paper, or one with a different shade or surface. This will save you running tests for every project.

Never give up on exploring papers. Your work and tastes will change; the paper that once enchanted you may become dull and

boring in time. Perhaps the paper that suited your style a few years ago may no longer be a perfect fit for your current technique. Buying new papers to try is an entirely sound investment in your printmaking and one of life's great pleasures.

## TESTING PAPERS

It is handy to have a dedicated linocut to use for testing new papers. Using the same linocut for testing will give you a consistent result to compare across papers. You will need a linocut with a variety of cuts, including fine detail and areas of uncut lino. The linocut should be large enough for it to be easy to assess how the paper is performing. If you are new to lino printing, cutting a sampler would be a good way to practise cutting skills, explore mark making and create your tester block in one hit.

Using the same linocut and ink to test new papers will make judging and comparing the paper's performance much easier.

Test your paper by printing up the block with a single layer of ink. Assess how the paper feels to handle and how it takes the ink. Is the coverage equally good for cut detail and uncut areas? Check it again when it is dry. If you like the results, print your linocut again on another sheet in several layers to simulate a reduction print, observing if the paper stays fresh or starts to wear, and how it takes the layers of ink. This is all a little time consuming, but ensures there are no nasty surprises halfway through an important print.

## CARE OF PAPER WHILE PRINTING

All printmakers know the frustration of paper damage during printing. Dirty marks, unwanted embossing, tears, or wear can ruin an otherwise perfectly printed artwork. Keeping paper fresh and clean throughout the process is partially down to good working methods and partially to experience. The more used you get to printing, the easier it will be to manage your paper and catch problems before they develop. Don’t feel bad if your early prints are a bit grubby, the margins inky, or the odd one tears. In the early days, your focus will necessarily be on the printing process and managing your lino, inks and tools. Keeping the paper clean is an added concern when you already have plenty to think about. Achieving a pristine finish will get easier as you become more comfortable with the print process.

### Learn your paper

Get to know how your paper handles during printing. Become familiar with your printing papers and you will get a feel for the stresses they can take and any particular issues they might have. You may have a paper you love but it shows peg marks easily when you hang it to dry, one that is prone to awkward embossing, or is susceptible to creasing. Once you know your paper’s quirks, you can accommodate them and take steps to avoid any issues.

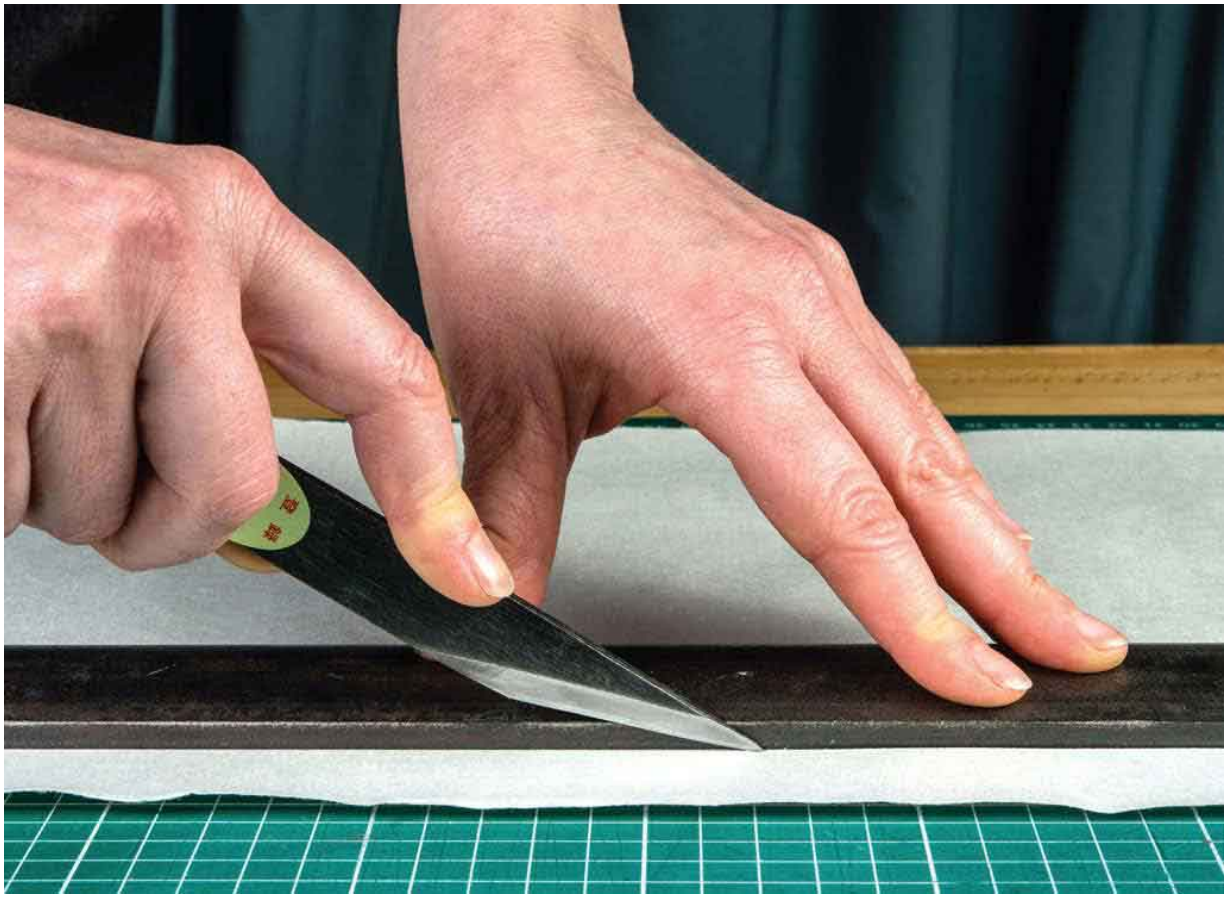
### A clean zone for dry paper

It is important to have a dedicated clean space to measure up and cut paper, plus a clean space to stack it ready for printing. Unless

you are tough about maintaining this, it is easy to set tools down without thinking. It only takes a spot of ink to spoil clean paper. A mat designated as a ‘paper only’ clean zone is an effective and portable answer. Flooring vinyl works well and is easily cut to size. Look for an offcut of the thinnest type with minimal surface texture. Happily, it will also be the cheapest to buy. I have two vinyl mats: a large one for preparing full sheets of paper, and a smaller mat to stack paper on when I am printing.

## Cutting and trimming paper

A cutting mat for cutting paper and lino to size safely is important. Be strict about using the cutting mat for clean paper and trimming dry prints only, and make sure it can’t slip about while in use.



A *kiridashi* knife is useful for cutting long fibred paper. Always use a cutting mat and straight edge or safety ruler.

Replace the blade of your paper cutting knife frequently if it has changeable blades. If you cut paper in batches, try to start each batch with a fresh blade. Always use a safety ruler or heavy straight edge to protect your hands when cutting. *Washi* and other long fibred printmaking papers can be tricky to cut with a standard craft knife. The blade can't be held very low to the paper, so the long fibres tend to catch and tear rather than cutting. A *kiridashi* knife is a long bladed Japanese knife designed to be held at a low angle to the material it is cutting. It is perfect for cutting long fibred paper. *Kiridashi* knives are not expensive and reasonably easy to find outside Japan. You will need to sharpen it along with your cutting tools.

## Handling paper

'Slow down' is probably the most helpful advice for keeping paper safe. Papers are easily dirtied, creased, dropped or torn if you rush with them. Set up a clean area for unprinted paper and another for drying prints and organize a clear path to move paper about as you work. Clean hands are essential, so get into the habit of checking them frequently.

Once a print is taken, the paper needs lifting from the block very carefully. It is easy to crack or crease paper at this point. Always lift the print away slowly, supporting it with two hands.

With large prints, avoid holding the paper stretched tight when moving it around the studio. Allowing some slack as you carry paper will help avoid the danger of kinking or tearing. If you hang prints to dry, try to support the paper in two or more places so that it doesn't curl while it dries. It's also important to use pegs or bulldog clips strong enough to hold your papers if you are organizing your own hanging system; some printmaking papers are surprisingly heavy.

## Lightweight papers

Working with lightweight papers requires care, but don't be put off trying a delicate paper. There are some very beautiful lightweight papers available and they can really bring something special to the finished print. Try to use long fibred papers: the longer the fibre, the stronger the paper will be for its weight. *Washi* papers are a

particularly good choice. Working with delicate papers and oil based ink is easier than working with water based ink.

*Moorland Spring* is printed on 36gsm *Kitakata washi* paper. This reduction lino print is designed to showcase the paper and the minimal design avoids overloading it with printing ink.

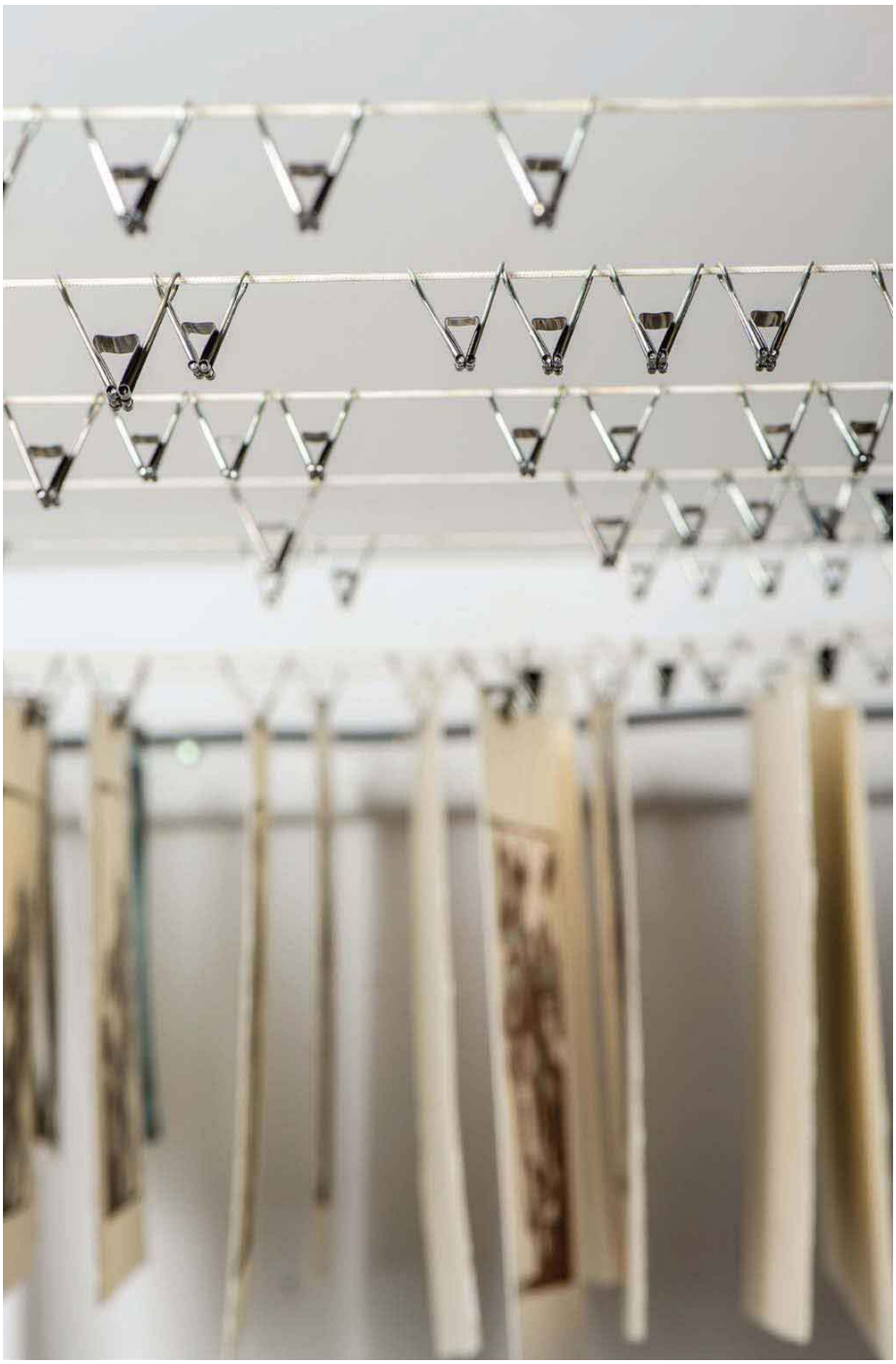
A delicate paper may need less ink than a heavier paper for the same coverage. Thinner layers of ink are also less likely to pull at the surface of the paper during printing. If you are working with thin layers of water based ink, be very careful not to allow the ink to become tacky during printing as this will certainly pull at the surface fibres and may even tear the paper (*see* 'Troubleshooting' in Chapter Four, 'Printing Ink').

Be extra careful when positioning delicate papers for printing to prevent damage to the edge of the paper. Take care that the paper is positioned correctly and isn't slumping. Slumping may affect the registration of the print and will increase the chances of the paper picking up stray ink from cut away areas. To minimize the risk of unwanted inking, take great care to wipe any unwanted ink away from uncut areas, especially at the edges of the lino. Consider masking any large cut away areas while printing (*see* 'Using a mask', Chapter Four).

## DRYING PRINTS

Air circulation plays an important part in drying prints. If a studio is closed up with no movement in the air, the drying process effectively ceases until the studio is opened up and air is moving again. This is especially true in cold weather. The movement of air around the prints is more important than heat, though circulating warm air is most effective for drying work. It may not be practical to heat the studio at night, but a small fan or open window keeping the air moving will make a big difference to drying times.

Prints will need a safe place to dry. Being able to hang or stack your prints near the press or printing area while you work is best for avoiding mishaps. A drying rack will hold prints flat and protected, but it will take up floor or worktop space and may not allow you to store as many prints as a hanging system. If you use a drying rack, be very careful about ink transferring from wet prints to dry prints. Be very sure prints are thoroughly dry before you stack more than one print in any section.



My studio’s hanging system is made from picture cord and bulldog clips. It allows me to hang many prints in a small area.

There are commercial hanging systems on the market. Some are very lovely creations, especially those that use glass marbles, but an efficient hanging rack is simple to make at home. The most

economical use of space is to hang two strings running parallel to each other, choose the width to suit the papers you favour. String bulldog clips by their handles so that the prints can hang at right angles to the strings, picture cord works well for the string. By hanging the prints in this way, it is possible to fit many prints into a small area. You will probably need to tighten your strings periodically. The lines will need to be at a height you can reach comfortably and positioned where the prints can hang without you knocking into them. Some printmakers with high ceilings have strung frames that can be hoisted up and down as needed.

There are some papers that will show a mark when hung by a bulldog clip. If the print can't be trimmed down, these prints will need to dry flat or have a little cap of clean scrap paper between their surface and the clip. If you are hanging papers for a reduction print that still have masking tape on them for registration purposes, try to hang the prints alternating up and down so that the tapes don't touch and stick together.

## Removing masking tape

Depending on your registration system, you may need to use masking tape on your printing paper. Masking tapes vary in their degree of adhesion so always check a new batch of tape. Over time, masking tape can lose its stick or become over-sticky, so best to check the roll if you haven't used it in a while. There's always a balance between using tape that can be removed without damaging the printing paper and tape that will hold the paper properly throughout the printing process.

If you do find that your tape cannot be removed easily, try warming it gently with a hairdryer and easing the tape off slowly. This technique can be helpful with very delicate papers or those with looser fibres that are prone to surface damage. I tend to warm my tape gently as a matter of course when using fragile papers. Be careful not to go too far as the paper can start to curl.

## Removing grubby marks

(For unwanted inky spots or patches, *see* 'Troubleshooting' in Chapter Four, 'Printing Ink'.)

If your reduction print has become a little grubby around the edges in the course of handling, careful cleaning should improve the print's appearance. Finger marks and slight smudges can usually be cleaned off with a clean putty eraser or gum eraser. Both these types of eraser are very gentle on the paper's surface and are unlikely to damage the paper. Warming a gum eraser in your hand before use will improve its performance. Blow away any crumbs it produces, don't brush them. Putty erasers require kneading before use to work effectively. They should be pressed onto the paper and lifted, exposing a new part of the porous inner surface to the paper each time, rather than rubbing them on the paper.

## STORING PAPER

### Unprinted paper

New paper stock needs to be stored somewhere dry, away from insects, sunlight and extremes of temperature. If the paper is in sheet form, it should be stored flat. A plan chest, cupboard with shelves, or even large boxes will work well. Make sure storage isn't positioned near a heater or anywhere likely to be damp. Allow new deliveries of paper to settle before use if the pack's temperature is very different from the temperature in your studio.

If you buy and store paper in rolls, protect the roll with a paper wrapper and make sure that the ends of the roll are protected from knocks. If you want a waterproof wrapper use polythene, which is chemically inert. It's a good idea to put a buffer of acid free tissue or paper between the paper roll and the polythene. If you use a polythene wrapper, check that there is no danger of condensation building up. Breathable spun 'fabric' polythene is available if condensation is a concern. It's a useful protective fabric for making re-usable bags to slip over rolls of paper.

Protecting the paper is important, but so is accessibility. Try to make it as easy as possible to get at your paper. Being able to access sheets of paper without damaging them is essential and the harder it is to get at the paper stock, the easier it is to get into the habit of leaving spare papers lying around where they can get

damaged. Always label paper stock clearly. It is so easy to forget the exact name, shade and weight of paper stock, which can make re-ordering frustratingly time consuming.

### Printed paper

Prints need the same careful storage as unprinted paper. Always make sure prints are completely dry before storing. Putting an acid free paper folder around each batch of prints with title, edition number and date noted in pencil on the outside will help to protect them and keep things tidy. You can also interleave each print with acid free tissue if you want to be especially careful. Prints are best stored flat. If they are in a plan chest or similar, make sure your prints don't knock against the back of the drawer or get crumpled by other prints. If you are using boxes to store your prints, wrap the prints in acid free paper for protection. Unless the boxes are archival grade, the cardboard is unlikely to be acid free.

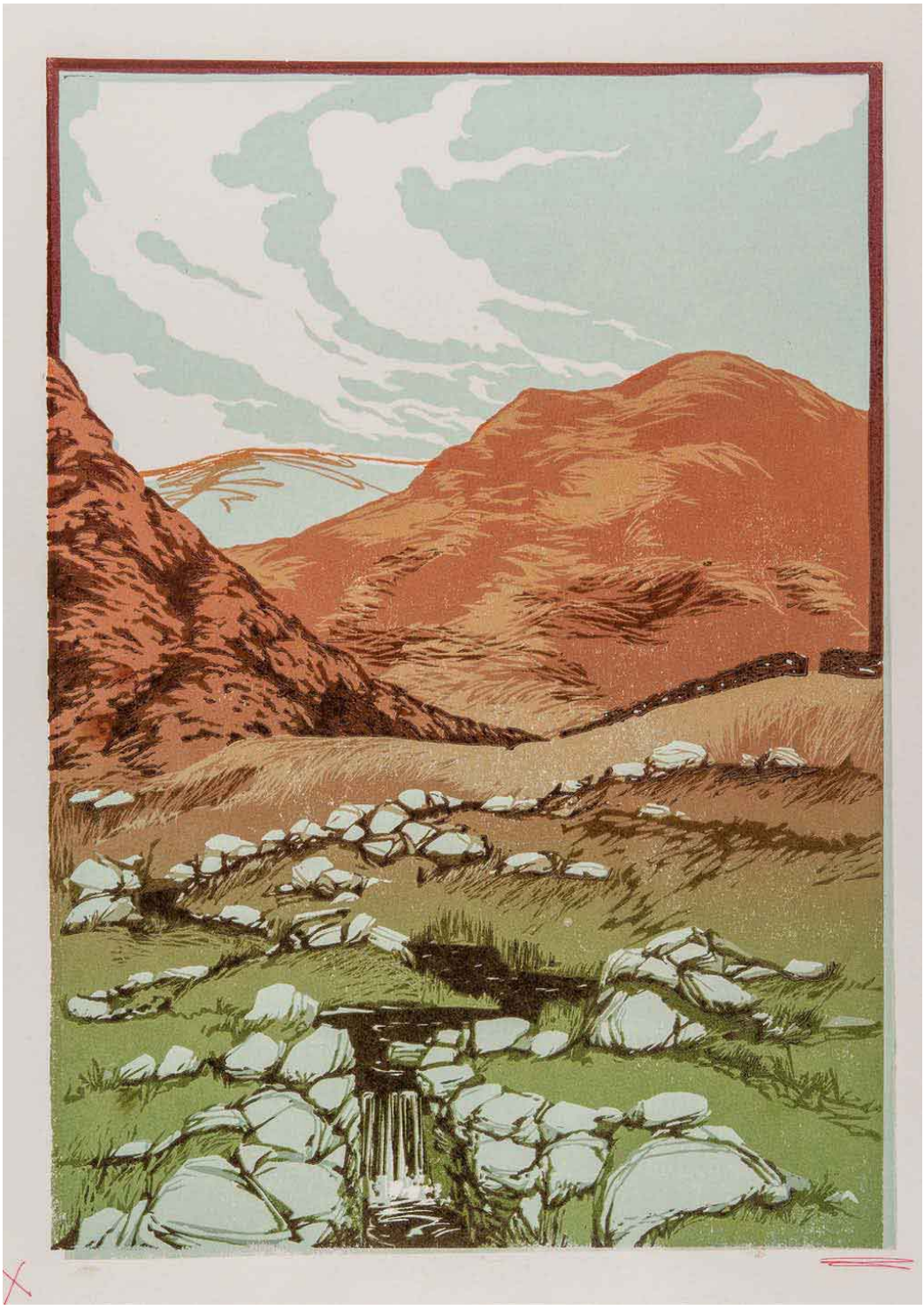
## MAKING, NUMBERING AND SIGNING MULTIPLES

Reduction lino printing demands that you decide how many prints you want to make at the start of this irreversible process. It would seem that every project you undertake will result in a limited edition of prints. In reality, it is possible to be more flexible with the work if you wish. It is perfectly possible to vary a set of reduction prints by using different colours, assorted inking effects and even varying the number of layers of ink printed on each paper.

### How many prints to make?

This is a question you will face every time you make a reduction print. It is entirely up to you whether you stick to a set number or vary how many prints you make each time. There are several factors to consider: what do you intend to do with the finished prints? Are you aiming for a matching edition of prints, or do you want to make a set of variations? How physically demanding is it to make the prints, how much storage space is available, and what is your budget for time, paper and materials? You might also consider the wear on the lino

block, though that is unlikely to be a serious factor unless you have a particularly delicate block or extreme printing method. If you are selling the prints, think about your audience and weigh up the higher value of a small edition against the greater number to sell in a large edition.



This is a sacrificial print; it was slightly misregistered at the beginning of printing and I have used it for colour testing while printing the rest of the edition. Adding a big X to the margin acts as a reminder that this is a sacrificial print.

Allow a few extra prints for mistakes, but don't go overboard. The more prints you have to work on, the more labour involved. If you drastically increase the workload with too many extras, you are more likely to get tired, lose concentration and make more mistakes – all very disheartening. Limiting your number of extras will keep you fresher and invested in careful work.

Factor in a least one or two 'sacrificial prints'. Sacrificial prints are printed onto the same paper stock as the proper prints. They are printed first throughout the printmaking process and are used to check for colours and any mistakes. This is in addition to any test or proof prints on cheaper paper. The more experienced you become the easier it is to judge how many prints you need to make, your wastage rate and if a single sacrificial print is plenty.

## Original prints and giclee (reproduction) prints

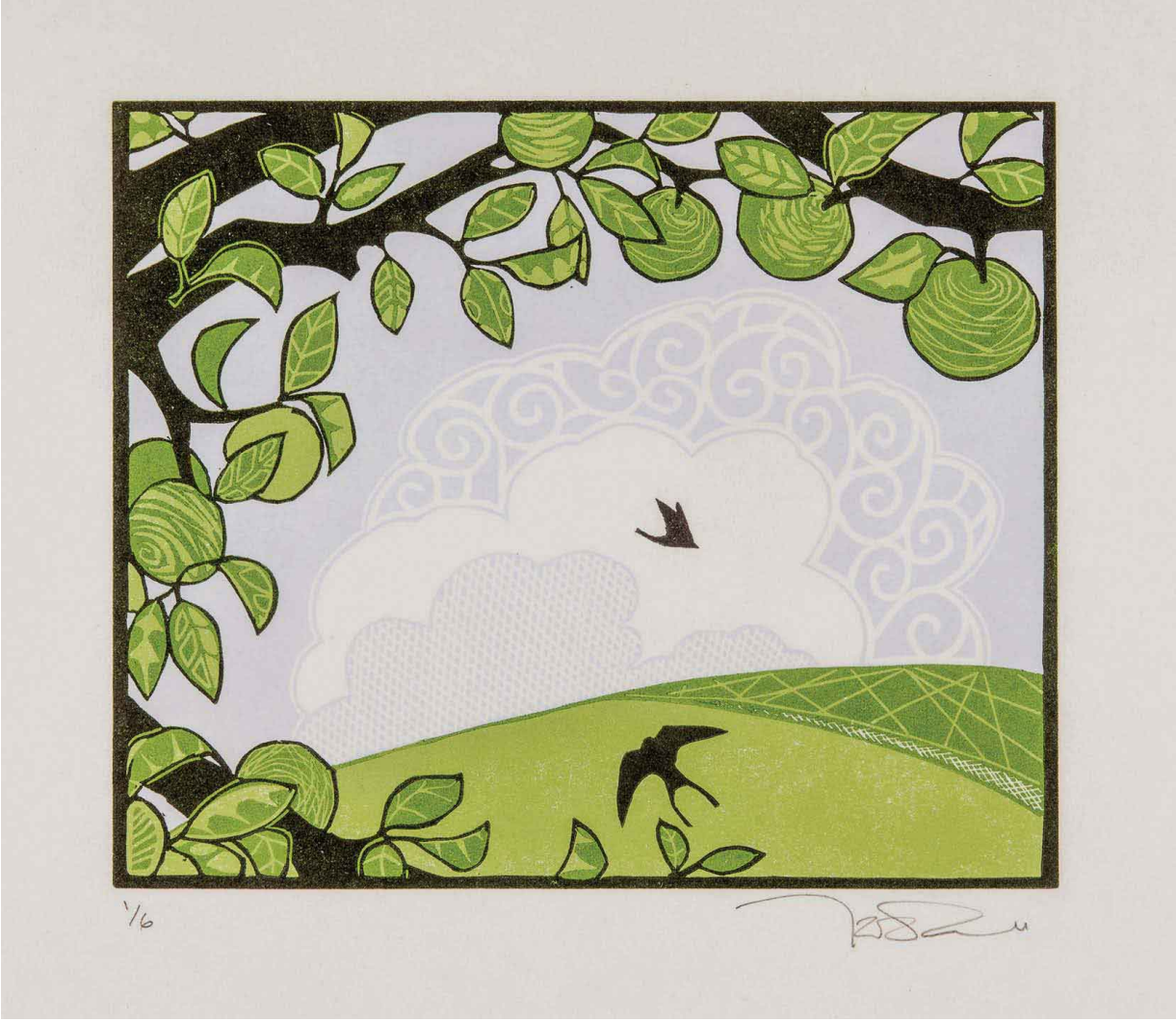
The general public sometimes find the idea of a print being an original artwork a little confusing. Many printmakers have heard the phrase 'That's nice, but do you have the original?' It is important to be very clear on this point, especially if you are selling work. The linocuts you design, cut and print are original artworks in themselves, however many you may print. Some printmakers use the description 'hand-pulled original' to help explain the value of their work.

Giclee prints add to this confusion as, although they are reproductions of an original artwork, they are sometimes signed, numbered and sold as limited edition prints. The distinction between 'limited edition' giclee prints, copies of original artwork, and limited edition original prints is understandably confusing to many. It is worth remembering that 'giclee print' is simply a different way of saying 'digital inkjet copy'. Many galleries, especially those specializing in works on paper, along with serious print fairs and shows will only accept original prints.

You may like to provide buyers with a certificate of authenticity when they buy an original print and some clients may ask for one for their own records. A certificate should include title, media and edition number along with your signature, and you might like to add date, price and any extra details about the print.

## Signing and numbering your prints

There are accepted conventions for signing and numbering prints. While these aren't set in stone or an absolute requirement, galleries and collectors of prints tend to prefer to see convention observed. Numbering conventions aside, it is very important to sign your work. Unsigned work is regarded as unacceptable by some collectors, or of lesser value. It may also confuse buyers who will question if the print is an original or reproduction.




The standard way of signing a print from an edition (here an edition of six prints). The title could be added to the centre of the bottom margin if desired.

Prints are traditionally signed in pencil, rather than pen. Graphite is a stable material and won't bleed or fade. Test pencils on a scrap of printing paper, as the surface of most printmaking paper can be easily damaged by too hard a pencil. HB usually works well and while the pencil should be sharp enough to write clearly, soften any freshly sharpened pencils a little first, in case they drag on the paper. It's sensible to number and sign prints all at once if possible and before they are stored. It helps to avoid mis-numbering and confusion later.

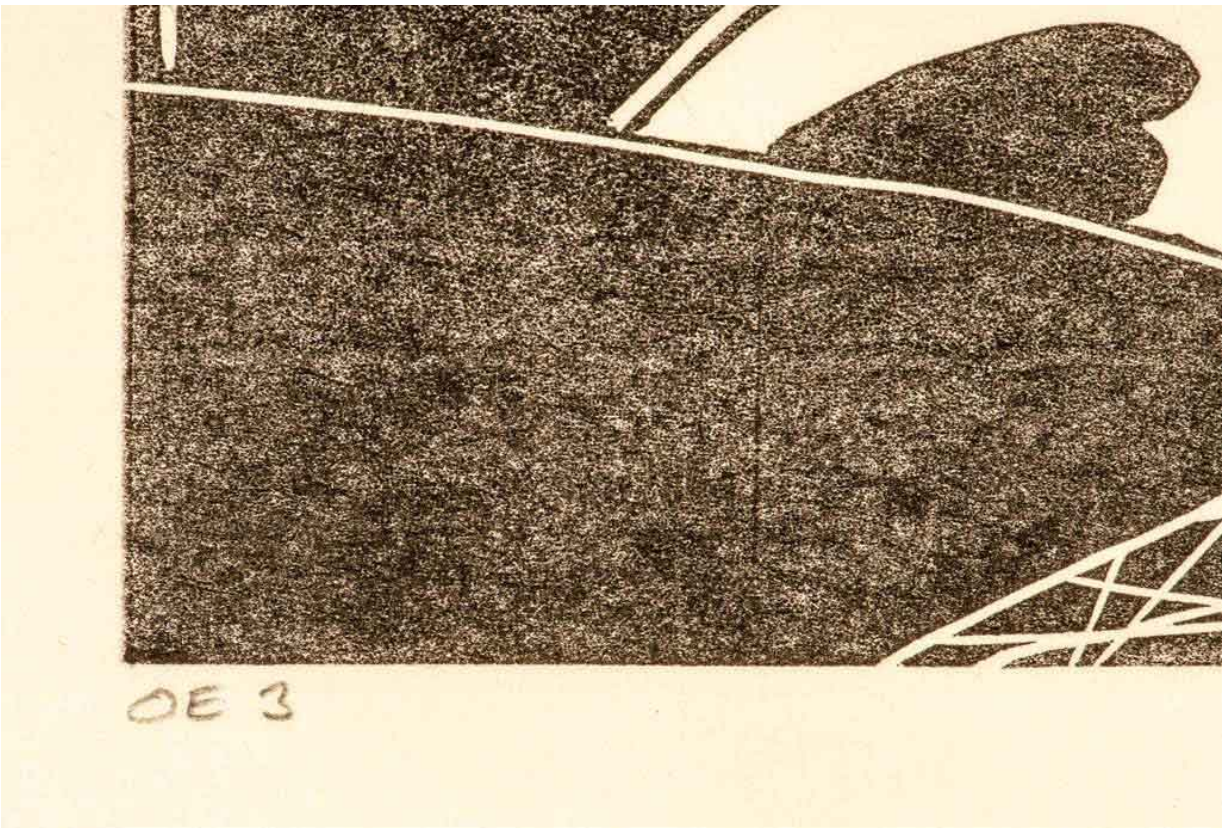
The convention for signing prints is to number the print in the bottom left corner and to sign in the right-hand corner. If you want to add a title, this is written in the centre. A date can be added after the signature if you wish.

## A limited edition

A limited edition is a set of prints taken from the same block or blocks. Traditionally prints in a limited edition are expected to be identical to each other. In reality, small variations are acceptable as part of the hand process, but the prints should be printed in the same colours, inked in the same way, and printed on the same paper stock. A limited edition has a fixed number of prints. It is for the printmaker to decide on the number in the edition. Once that number is printed the edition is complete and no more prints are made. Limited editions are preferred by some print buyers and many will not buy prints from an open (unlimited) edition.

## Open edition prints

An open edition means that prints can be produced *ad infinitum* as the printmaker wishes. Reduction linocuts are naturally limited so are not practical for an open edition. Multi block or single colour linocuts can be printed as an open edition. Prints from an open-ended edition are less valuable than limited edition prints, but are still original prints and should be signed. Some printmakers use the term OE and number each print as well as signing, others just sign the print. If your open edition contains variations, you could add the prefix OEV to denote this.




Adding OE is optional, as is numbering for an open edition of prints, but the print should be signed as usual.

## Variable editions

There are two types of variable editions. There are those where each print is variable and differs from the next; hand-coloured prints are a good example of this type of variable edition. The other kind is where there are different sets of identical prints, which could be different colourways, or have a different number of layers for example. Type one prints are usually labelled V/E and then numbered as for a limited edition. Type two prints have the prefix V1 for the first set, V2 for the second and so on, and then each set numbered as for a limited edition.

Two differing variable editions, on the left all prints in the edition are variable. On the right there are a number of sets of identical prints.

## Artist proofs, test proofs and working proofs

Artist proof prints are traditionally extra prints in addition to those numbered in a limited edition. They are the same as the prints in the limited edition and originally their purpose was to provide artists with prints to sell, gift or keep while their gallery would be responsible for selling the edition. Convention dictates that artist proofs shouldn't exceed 10 per cent of the finished edition and should number no more than ten in total. Artist proofs have the prefix A/P. They are normally considered to be of equal or greater value than the edition, provided they are of the same quality as the edition. Some printmakers will label slightly flawed or differing prints as A/P, but strictly speaking, these should come under the heading of test proofs.

The difference between artist proof and test proof prints can be a little confusing and the boundaries are often blurred.

Test proofs, sometimes called trial proofs, are prints taken to test the print as the edition is made. They may be in a slightly different colourway or vary in other small ways from the edition. Sacrificial prints worth keeping could be numbered as test proofs if they varied from the edition. These prints have the prefix TP or T/P. A print taken and stopped at an earlier stage in the printing than the finished edition is known as a working proof and has the prefix WP or W/P. These proofs are of less value than the edition, are often on cheaper paper and are generally not for sale. Some artists use them in swaps or perhaps sell them off as a bargain item.

## KEEPING RECORDS

Even if you don't sell your prints, it is sensible to keep a record of the prints you make. Keep a note of the title, medium, size of the print, number in the edition and date. If you have different storage places, note each print's location too. It doesn't matter whether the records are in a notebook or computer database as long as you are consistent. If you can attach a photo, so much the better. If you sell your prints, it is essential to keep records. Make sure to add in details on whether the print is framed, mounted or unmounted. You will need a way of keeping track of your work if you send out prints to shows or galleries and a record of whether prints are still available or have been sold.

## FRAMING AND MOUNTING

### Mounting

Unframed prints are often mounted and wrapped for selling unframed and presented in a browser for buyers to look through. Prints displayed in this way get a lot of handling, so it is important that the wrapping protects the work and keeps it clean. If you are mounting a print for short term display only, using an acid free mount board is best practice, but not critical. If the print is to be mounted for any length of time, make sure to use an acid free board. Cheaper

boards and cardboard are very unlikely to be acid free and will deteriorate in time and may damage the print. The print and mount should be wrapped in clear cellophane or put into a cellophane bag and sealed. Use clear sticky tape to seal up the cellophane; masking or brown tape soon gets grubby and tattered. Mounted prints will need the cellophane wiping clean regularly to remove grubby fingerprints and smears.

Always label the print clearly on the back. Half the fun of looking through browser prints lies in flipping them over to read the details. The print should be labelled with your name, the title, medium and price. Noting the dimensions of the print and adding your contact details is helpful for buyers. Some galleries prefer artists not to put their own contact details on work, so check with the gallery if you are labelling for gallery display.

A simple mount consists of just a backing board with a cellophane wrapper or bag for protection. The board should be cut a little larger than the print and photo corner supports can be used to hold the print safely away from the edges of the mount if needed.

Prints can also be mounted in a window mount. This is a more traditional look, and the print will take up more space in the browser. A window mount can help to hide marks in the margin or give the print more dramatic impact and it is also a good way of displaying pairs or multiple prints intended to be framed as one. Window mounts are best cut on the bevel with a mount cutter. It is important to use conservation grade framing tape to fix the print in the mount rather than sticky tape or masking tape.

## Framing

Framing will add impact to your prints and is likely to be a necessity if you want to hang prints for sale or exhibition. For selling purposes, keeping the frame simple and neutral in appearance will appeal to the widest audience. Having a ‘house style’ will ensure that your work looks cohesive when you hang for exhibition. If you are working with a framer, you are more likely to get a better price for sticking to one kind of frame, especially if you choose a standard moulding and mount board.

A properly made frame will protect the print from damage. It is important to make sure that any materials used within the frame are acid free and will not damage the artwork in any way. There should always be a gap between the print and the glass in the frame. Be sure to write your name, the title of the work and the medium on the back of the frame.

It is worth considering the glass you use in your framing. Anti-reflective art glass is considerably more expensive than ordinary glass, but it will improve the artwork's visibility dramatically by cutting out most of the reflections while offering protection against UV light. Depending on your market, many print buyers appreciate the difference in appearance plus the greater protection and will happily pay the additional cost.

## Hanging and storing framed work

Framed prints should be hung with a gap between the back of the frame and the wall. Sticking bumpers (small circles of felt with a sticky backing) on the back bottom corners of the frame will hold the print away from the wall and allow air to circulate.

Prints ready to be handled safely. The one on the left has a traditional window mount; the one on the right has a backing board only. Both are wrapped in cellophane for protection.

Avoid hanging work in steamy or damp environments like small or unventilated kitchens and bathrooms and avoid hanging work above a direct heat source. Prints, even with UV glass, are best hung in diffuse natural light and away from direct sunlight.

If you need to store framed work as stock, make sure it is kept in as dry and stable an atmosphere as possible. I stack framed work upright by size, back to back, front to front. The framed prints rest on wooden battens that hold them away from the floor in divided bays. I have a breathable fabric curtain along the front of the storage area to maintain airflow.

Inevitably framed work needs a tidy up when it comes out of storage. Check for dust and dirty glass and wipe off or sand away any dark spots deposited on your frames by spiders.

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CHAPTER 4

# Printing Ink

Throughout this book the word ‘ink’ refers to printmaking inks, rather than to inks for writing or drawing, unless specified. Printmakers commonly use ‘ink’ as a verb as well as a noun. ‘Inking up’ is a generally accepted term for the process of rolling ink onto the block for printing.

My printing inks hung up for easy access and tidy storage, though the tubes can always do with a clean.

# WHAT IS PRINTING INK?

In very basic terms, printing ink consists of coloured pigment mixed with a varnish, or medium. The medium acts as a vehicle for binding and holding the pigment. It is the function of the ink making process to disperse the pigment evenly in the medium. Types of medium used in printing inks vary depending on the ink (*see* 'Types of printing ink', this chapter), but all are designed specifically to meet the demands of the printmaking process.

## The pigments

The coloured pigments used for printmaking come from natural or synthetic sources. Neither source is superior to the other. Some colours are best sourced naturally, others synthetically. In some instances, synthetic pigments replace natural sources that are now recognized as toxic, or whose collection has a negative impact directly or indirectly on the environment. There are some colours that only exist as a synthetic pigment. Pigments all have differing qualities, both in their own right and in the influence that they have over the finished ink in terms of rheology (viscosity and tack), softness, absorbency, opacity, transparency and so on. The manufacturer must take these into account when mixing inks.

Powdered pigments ready to be used in the production of quality printing inks. (Photo: Cranfield Colours)

Pigments need to be processed into a fine powder for mixing into ink. This is commonly done by milling, a process where raw pigment is passed through increasingly fine sets of rollers, gradually crushing

it down into fine particles. Pigments vary in quality and this is reflected in the price of inks. Good quality ink is made with premium pigments that have been milled to exacting specifications. The resulting inks will have a consistently identical colour, be pigment dense and rate high on the lightfast scale (*see* 'Buying inks').

### The medium

In addition to carrying the pigment particles, the medium is designed to produce ink that has the correct properties for the specific demands of the intended printmaking method. These properties are as follows:

- The ink must be consistent, free from lumps and have a uniform texture. It must roll out into a smooth even layer, delivering an even amount of pigment.
- Creep is the measure of an ink's flow. The correct creep ensures the ink is soft enough to roll out, but has enough body to coat the roller and the block.
- Tack refers to the stickiness of the ink. Ink must not be so sticky that rolling out is a problem, but it should be sticky enough to adhere to the roller and the printing paper.
- Viscosity refers to an ink's reluctance or willingness to flow. Most oil based inks are thixotropic. This means that they will respond positively to the energy applied through inking up and the viscosity will reduce through interaction.
- Ink needs to dry and *cure* so that work can be handled and framed. This consists of near instantaneous setting in combination with the slower drying and curing processes.

## TYPES OF PRINTING INK

The majority of printmaking inks fall into three basic types for relief printmaking: oil based inks, oil based inks that can be washed with water, known as safe wash inks, and water based inks.

### Oil based inks

As the name suggests the medium in these inks is an oil, usually linseed oil. These inks have slow drying times, with the ink curing in reaction to exposure to air. Many printmakers add driers to speed up the drying process (*see* ‘Additives and modifiers for ink’, this chapter). Traditional oil based inks are the stiffest in structure of the printing inks and require a cleaning agent or solvent rather than soap and water to remove them (*see* ‘Cleaning up’, this chapter). Once fully cured, oil based inks are highly unlikely to bleed or be re-wetted. Premium oil based inks have subtly different textures depending on the pigment. This is because the medium is precisely tailored to perform at its best according to each pigment’s characteristics.

The milling of pigment for printing ink at the Cranfield Colours factory.

## Safe wash inks

These inks offer the performance of an oil based ink, but are cleaned away with soap and water. Like traditional oil based ink, the medium is linseed oil. The linseed oil is processed to emulsify with soap and water for cleaning. These inks tend to be softer than traditional oil based ink. Safe wash inks have the slow drying time of oil based

inks and, as with oil based inks, this can be resolved by using driers. The inks can be cleaned off with soap and water when wet. Once dry, safe wash ink cannot be dissolved with water in the same way as a water based ink. These inks can be mixed and used with traditional oil based ink, but will require cleaning with a solvent once the ink is combined with traditional oil based ink.

### Water based inks

These inks are soluble in water and are more fluid in texture with more creep and less tack than oil based inks. Water based ink can be washed away whether the ink is wet or dry and the ink dries by evaporation. Water based inks are a popular choice for simple prints and a quick result. They do present some challenges and are not as adaptable as oil based ink (*see* 'Buying inks', this chapter).

## INK SUBSTITUTES

There are additives on the market for turning paint into printing ink. These formulations work up to a point. They are inevitably a compromise compared to working with ink specifically designed for relief printmaking. I would only suggest using an ink substitute as an experiment, or for some cheap printmaking fun. If you are convinced this is the way to go, invest in a couple of proper printing inks and run some tests to compare results. If you never try the real thing, you may risk your printmaking being limited by the ink substitute's capabilities, rather than choosing it deliberately for its characteristics compared to a genuine printing ink.

## ADDITIVES AND MODIFIERS FOR INK

Additives and modifiers are a range of products designed to alter the behaviour of printing ink, making it dry faster or slower, thickening or loosening the ink, or turning it transparent. These products are not compulsory; their use is very much a matter of individual preference and the demands of the work in hand. However, it is sensible to be aware of their benefits. Additives, especially driers, can contain

irritants. Always read the label and follow any health and safety instructions.

A selection of additives and modifiers for adapting printing inks to the user's requirements. (Photo: Handprinted)

Most ink manufacturers have informative websites detailing how their particular additives work and a good printmaking supplier will also be able to advise. Additives that fundamentally do the same job often go by different names. The following is general information about additives, but it is important to do your own research and tests to ensure you get the most from any additives you choose to use.

## Water based inks

### Drying retarder

As the name suggests, this is an additive that slows drying times for water based ink. It will help to prevent ink from becoming tacky during handling in warm, dry conditions. It comes in liquid form and will not alter the colour of the inks. Check the manufacturer's

instructions, usually only a small quantity is needed. Used in higher than the recommended amounts, drying retarder may soften the body of the ink, reduce tack and increase creep, or cause the ink to bead on the surface of the lino or flood the block.

## Oil based and safe wash inks

### Driers

Driers will greatly speed up the time that oil based ink takes to dry. There are two types: manganese and cobalt. Manganese is available as a liquid drier and as a wax drier while cobalt drier is generally only available in liquid form. Driers should be used at 3–4 per cent or less. Liquid driers become ineffective if used at too high a percentage and, thanks to their spirit base, may actually prolong drying times. My drier of choice is manganese wax drier, easy to use and very effective.

- Cobalt salt drier acts as a catalyst to encourage ink to dry from the top surface down and is the more powerful drier of the two. Cobalt can make the surface of the ink very shiny, especially in reduction printing.
- Manganese is a body or ‘through’ drier, drying inks from the inside out. It will not change the surface finish of the ink.

### Tack reducer

Tack reducer decreases the stickiness of ink. Tack reducer’s function is not to dilute the body of the ink, rather to cause the ink to flow more easily. Tack reducer is also sometimes called ‘wiping compound’ in relation to etching ink. It has the texture of petroleum jelly and needs thorough mixing into the ink. Be very cautious and add it to the ink in small amounts, checking texture before adding more. Too much will cause the ink to flood the block. You are more likely to need tack reducer with traditional oil based inks than with the softer safe wash inks.

- A small amount can be useful to improve the transfer of ink to paper when printing large sheets of flat colour.

- A touch of tack reducer can help if extended inks become over sticky.
- Tack reducer can help with very stiff inks on cold days. That said, always check that working the ink with the roller isn't enough to soften it before you add tack reducer. If you rely on tack reducer to soften cold, stiff ink, the ink may become too fluid once the studio warms up and the ink has been worked with the roller for a while.

**Safe wash oil**

Safe wash oil is the linseed oil used as the medium in safe wash inks minus the pigment. It will thin and dilute safe wash inks. Use with caution to avoid flooding. If you want transparency, use extender instead.

**Talc**

Talc is a general term for colourless particles that absorb oil. Adding talc to oil based ink will stiffen it. There is no standard talc for use in printmaking. Traditionally magnesium carbonate was used to stiffen printing inks, but there are now health concerns surrounding natural talc along with the use of nano (ultrafine) particles. Calcium carbonate, French chalk or modern baby talc, which has a corn starch base, will all work as stiffening agents. Add a little at a time and mix well.

**Extender**

Extender is effectively transparent ink. It may come under a different name like 'reducing medium' or 'transparent vehicle'. Adding extender to ink will increase its transparency, without altering the body of the coloured ink. Extender will open up a host of creative possibilities and I strongly advise adding it to your collection of inks (*see* Part Three of this book for practical examples).

Adding extender to a colour will make that colour increasingly transparent, very different to creating pale colours by adding white pigment. With extender it is possible to create a pale red without turning it into an opaque pink pastel shade.

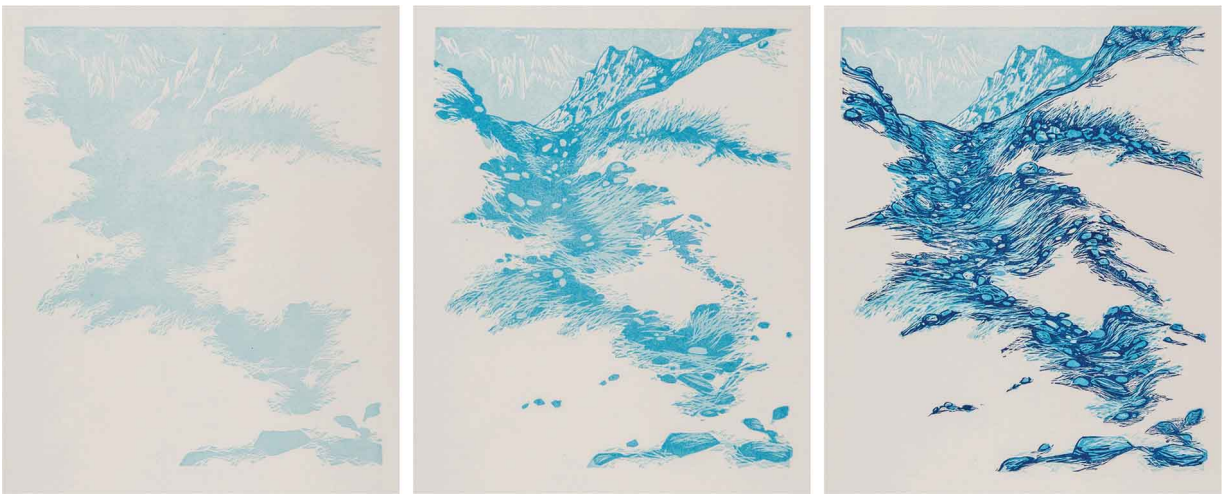
Transparent colours printed in layers create colour mixes on the paper; a yellow over-printed with blue will produce a green. It is also

possible to print ‘process colours’ in the same way as a commercial printer. Using semi-transparent black, yellow, cyan and magenta printed in overlapping layers, it is possible to create almost any colour. This process is called CMYK after the colours involved: Cyan, Magenta, Yellow and the Key plate Black.

Extender used for a rainbow roll (*see* ‘Additional inking techniques’, this chapter) will create a subtle bleed of colour from intense pigment through to very dilute pigment, allowing colour shadings reminiscent of Japanese woodblock prints. In addition, transparent ink allows the printmaker to take advantage of the white of the paper shining through the ink in much the same way as a watercolourist. I work with this technique most of the time.

While extender is technically ink with no colour and will not ‘dilute’ ink, it can change the behaviour of the ink when you roll it out. Extender can make the ink a little sticky. It takes more time to spread extender evenly onto the lino for printing. There is no need to increase the amount of ink you add to the block when using extender, but do increase the time you spend rolling it out evenly.

Extender can make ink more likely to flick up onto the bar of your roller. This residue can gradually gather and then drip back down onto the roller as you work, creating a splash of darker ink or causing uneven speckled inking. It’s sometimes referred to as ‘ink misting’ and it is easily avoided by wiping the roller’s bar regularly, but you need to watch out for it.



Extender creates pale tones through transparency. Here, Prussian blue is mixed with extender rather than opaque white ink to create this landscape. Like a watercolour, the white of the paper shows through the ink giving a delicate translucent effect.

## Colour change in oil based extender

A phenomenon common to oil based inks based on a linseed oil varnish, especially when printing light transparent shades, is the temporary appearance of transient chromophores. A chromophore is the part of a molecule that we see as colour. In the process of drying, the transient chromophores in the linseed will create a yellow tint to the ink. As their name suggests, the effect is temporary and the tint fades with exposure to daylight. This is not to be confused with the permanent changes of colour over time through aging. In normal conditions, if a print is left to dry in daylight, the transient yellow tint will disappear permanently. In the normal course of printmaking this passes unnoticed, the process is subtle and the colour pigment in the ink hides the effect.

In extender there is no pigment to hide the process so you may see a yellow tint appear. The speed with which the tint appears varies with the property of the linseed oil used. I have mixed pale greys consisting of 98 per cent extender and 2 per cent colour that have turned from grey to yellow-grey on the inking slab, while others have changed gradually once printed. This can be very disconcerting if you don’t expect it, but the ink will revert to true colour providing the print dries in daylight until any yellowing disappears. In summer, with brighter light, the reversion will be quicker than in winter. In the

overcast and dull winter light a print may take a month to clear, in the bright sun of high summer it may only take a couple of days to achieve the same result. If, like me, you work with extremely extended colour, you may see colours change as you mix. Be prepared to work with ink that might not revert to its true colour until some time after it is printed. Be sure that colours have completely lost the transient tint before you store prints. The disappearance of the yellow tint relies on daylight. If the transient chromophores are still present when the print is stored in the dark, they will emerge as the inks cure and any very transparent areas of your print may appear yellowed. This can be resolved at any time by exposing the print to daylight to remove the tint.

## BUYING INKS

### Oil or water?

The biggest dilemma when choosing inks for the first time is deciding between oil based and water based. Many printmakers begin to learn with water based inks and may feel this is the safe and easy way to go. Oil based inks can seem a bit of a bother with their potential for mess, mysterious additives and longer drying times.

The glossy shine of pure poppy red, oil based ink, fresh from the tube onto my glass mixing slab.

Having worked with both oil and water based inks, I consider water based inks far more challenging to use really successfully than oil based ink and trickier to manage when it comes to manipulating ink for creative effects. Conversely, oil based inks are by no means as complex to use as they may first appear. With slower drying times, they are far easier to manipulate and, thanks to safe wash inks, clean up can now be done with soap and water if you prefer.

Creative inking aside, there are some common challenges you may encounter with water based inks, especially when creating an edition of reduction prints.

- As a general observation, oil based inks (traditional and safe wash) generally provide a sharper printed result than water based. Water based inks have a greater tendency for the ink to filament (feather) into the paper and fine lines lose definition.
- Water based ink dries quickly. While this might seem like a bonus, in warm dry conditions the ink may become tacky and begin to dry on the inking slab and the roller, rather than the paper. Water based inks are also prone to dry in this way if you are trying to work with very thin layers of ink (*see* 'Additional inking techniques', this chapter). If you mix up a colour in bulk, be sure to protect it from drying out on the slab while you work.
- The damp of water based inks can wrinkle some printing papers.
- It is harder to achieve transparency with water based inks and printing light coloured inks over darker ink is less effective than with oil based ink.
- Be careful when mixing colours with water based ink. Colours tend to shift darker, altering slightly as the ink dries on paper. Always test how colours look once they are dry on paper.

## Which make of ink to buy?

Inks vary widely in price and each manufacturer has its own recipes and methods for making up ink. It is sensible to shop with a printmaking specialist selling a broad range of inks as they can discuss your needs and advise you. A specialist supplier will have colour charts with real ink samples, the only way to check a colour properly. You may have to pay to have a chart sent if you can't get to a shop, but they are a worthwhile investment.

The quality and performance of an ink is directly reflected in the price and it is advisable to invest in the best inks you can afford. Good inks make printing successfully a much easier task. A good quality ink will be pigment dense with rich, true colours. It will roll, print and layer up consistently, and have a high degree of colourfastness. Cheaper brands will be less colour dense. They will

contain bulking agents to eke out the pigment and that pigment is likely to be of inferior quality. Cheaper inks are also likely to be less colourfast and may be inconsistent in colour or texture. Layering can be an issue for some budget inks, causing problems when reduction printing. Cost aside, some water-based inks are not designed to be printed in layers, so always check with your supplier if you are buying water-based inks for reduction printing.

Unless you are working with ephemeral prints that aren't intended for keeping, it is important to have ink that is as colourfast as possible. The International Blue Wool Scale is commonly used by the printing industry. This scale measures from 0 (extremely poor) to 8 (lightfast). A score of 6 is considered very good with a display life of 50–100 years and anything above 6 is considered excellent with a display life of over 100 years (*see* 'Framing and displaying prints').

It is possible to mix inks made by different manufacturers together. The inks will need to belong to the same family; oil, safe wash or water, and be cleaned off in the same way. Ask your supplier or run some tests to make sure. Some manufacturers advise that their safe wash inks are compatible with their oil based range provided that they are cleaned off with a cleaning agent, not water. I use several different brands of traditional oil based ink together, plus a few safe wash inks.

## HANDLING AND STORING INKS

### Choosing colours and containers

As you might expect, printing inks come in an abundance of colours. Inks are also available in metallics, neon and opalescent finishes. Starting with a set of basic primary colours plus black, white and extender will allow you to mix a huge range of colours and experiment with transparency. You can add in other colours as you get to know your preferences. Some manufacturers offer starter packs of inks with basic colours in small tubes. Learning to colour mix from the basics is an excellent way of getting to know your printing inks and a feel for how each colour performs. Keeping a notebook with samples of your colour mixes and how you created

the colour can be useful while you are finding your feet. I still occasionally refer to my ‘Book of Smears’ detailing my early colour experiments.

My ink tubes hung for storage, conveniently close to my inking slab, with rollers hanging above. On the far right of my slab, my tube wringer and a pot of barrier cream.

Inks are commonly supplied in tubes or tins. Inks are sometimes available in cartridges and use a gun to dispense the ink, the same system as a caulking gun. The cartridge and gun system is probably best suited to inks in a shared studio, or college setting, rather than for personal use by printmakers invested in recapping and protecting ink. Tubes are a sensible option if you are a beginner, they are easy to handle and keep ink in perfect condition. A tin can seem like a better bargain, but it may prove more expensive in the long run if it deteriorates before you can finish it.

Inks have a huge potential for becoming very messy, very quickly. It makes sense to store inks somewhere adjacent to your inking slab that is easy to access and maintain, and keeps mess to a minimum. A homemade colour chart beside the inks is helpful once you have a larger collection of colours.

**Tubes**

Hanging inks upside down from bulldog clips on nails works very well. A sturdy tube wringer, designed to extract the last drop from any tube is also helpful, especially with the stiffer oil based inks. These can be tricky to squeeze out, especially in cold weather. If you use a wringer, wring slowly and watch you don't pierce the tube. Sometimes there is a delay between squeeze and the ink's arrival – if you are too enthusiastic the ink will finally appear and just keep on coming.

**Tins**

Tins are easy to stack and store, but need care to keep the contents in good condition. Most tins of inks come with an inside lining designed to sit on the ink and prevent the surface from developing a skin (skinning). I find most of these linings too flimsy and remove them on arrival, replacing them with a heavy duty polythene disc, cut to size, that can be repeatedly pulled up and pressed down flat to the ink without tearing. Try not to dig in and scoop up ink as this will increase the surface area, exposing more ink to the air. Scrape away the ink you need instead, keeping the surface as smooth as possible. Not all inks will skin, but those that do will take time to skin over. If you will be a long time finishing a tin, it is sensible to stick

with tubes. Be careful when dealing with skinned ink, it is important to avoid getting any skin into the clean ink as it will spoil the print.

### Spare ink

It takes time and experience to know exactly how much ink is needed when mixing up colours and you may find you have a surplus. When I was a student, I was on such a tight budget that I used any surplus ink from one layer of my printing as the base to mix the next darker colour and so on. These days I have the experience to mix the right amounts of ink, but sometimes I still like to start with a base and mix from colour layer to colour layer to create complex and subtle mixes.

Spare ink can be stored for later use. Make a cone out of aluminium foil and tip in the ink, sealing up the top. The tip of the cone can be snipped off and the ink squeezed out like cake icing when needed. Don't forget to label with a colour sample. Oil based inks will have a fairly short storage time span if driers have been added. For short term storage on the inking slab, oil based ink can be covered with a little dish or plastic film. Water based inks will need covering with plastic film pressed onto their surface to prevent drying.

## INKING UP

### Equipment for inking up

Alongside inks and their additives and rollers, which have their own chapter, there are various sundries that will be useful for inking up your lino:

- Safety equipment: make sure you have gloves, eye protection where necessary and an appropriate first aid kit to hand. Check inks and additives to ensure you are complying with health and safety advice.
- Kit for cleaning up after inking (*see* 'Cleaning up', this chapter).
- Palette knives: have enough to be able to dedicate a knife to each colour you use, plus knives for mixing. Ink can be stiff, so make

sure any plastic knives are a sturdy wedge shape to avoid snapping.

- Paper strips: keep paper trimmings and store a pile in the inking area, they are handy for testing out colours and for scrapings of ink when cleaning up.
- Newsprint or newspaper: useful for blotting, wiping and cleaning up.
- A means to wash your hands and barrier cream for protection. A sink is great, but a bucket of cold water is fine. Cold water is better for your skin (*see* 'Cleaning up', this chapter).
- Apron and a clean rag. I always keep a rag in my pocket, or pinned to my apron like the hanky of a small Victorian child, reserved for hand wiping only.

### Managing the inking area

Keeping clean and organized when inking up will make the whole process much easier and inky disasters far less likely. From time to time, especially as you start out, an ink knife will end up on the floor or colour will mysteriously appear on unprinted paper. Ideally you can minimize these mishaps by having a dedicated space for inking up, where inks, rollers and printing sundries are stored adjacent to a permanent inking slab. This inking area should be conveniently close to the press or printing area.

In reality, you may have to compromise, share space or need to set up each time you print. If so, try to assemble everything you need at the start of the printing session and make sure that there is a clear path to the printing area, plus empty space to accommodate wet prints. That way you can focus entirely on printing and not have to stop and hunt for kit or make spaces as you go.

Whatever your situation, check that the inking plate and rollers are wiped free of dust before you start. Keep things as tidy as possible while you work and surfaces clear to minimize the chances of inky mess spreading everywhere. Check your hands regularly for ink as you work, and endeavour to remove any cats from the room before you start.

## ROLLING OUT AND INKING UP

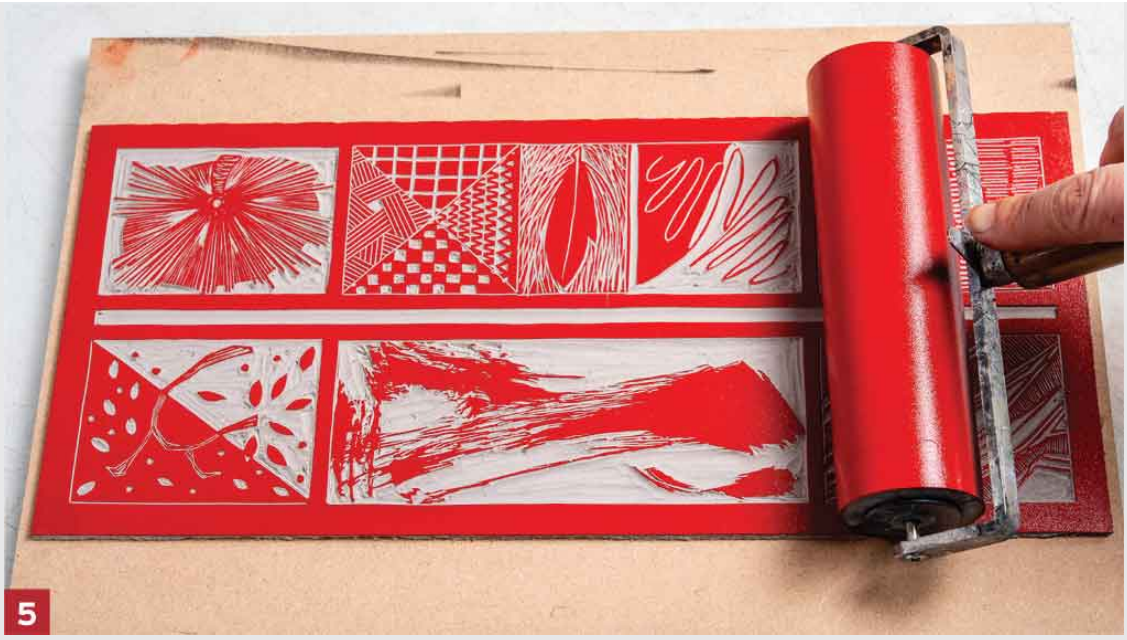
Learning to ink well takes practice and experience. The best thing you can do is to make lots of prints. If you followed the suggestion in Part Two for designing a one colour print, now is the time to put that linocut to use for some practice printing.

Begin by putting a small amount of ink at the top of your slab. If you are new to printing, you will almost certainly find you need less ink than you think. Go easy and add more as needed. Spread it out into a line the width of your roller. Touch your roller to the edge of the line to draw down some ink. This way you can draw down ink as you need it and won’t risk taking too much and over-inking the roller.

Work the ink by rolling it out across the inking slab. It’s important to lift the roller at the end of each stroke to ensure it spins and distributes the ink evenly. Don’t roll the roller backwards and forwards without lifting; that will just keep the ink sitting in one spot. Oil based inks improve with working, so take your time. A stiff oil based ink may take several minutes of rolling to get it into the perfect state to print. Likewise, heavily extended inks need to be thoroughly worked both on the inking slab and on the block for even inking.

The exact amount of ink you prefer on the roller is a personal choice, but avoid overloading it. Aim for the ink to have a texture like fine suede, both on the inking slab and the roller. It will make a pleasant ‘shh-shh’ noise as you roll.

If the texture is like orange peel or you can see any ridges, there is too much ink. Instead of the ‘shh-shh’ noise, you will hear a squishy hiss. Scrape the excess ink back to the top of the inking slab and use the ink remaining on the roller to spread out into a thinner layer.




Take the loaded roller and roll it over your lino block distributing the ink as evenly as possible. Re-load the roller and ink again as necessary to ensure that the whole block is covered with an even layer of ink. Work at the block from different directions to ensure even coverage, being sure to catch the edges and corners. Watch how much pressure you apply. The weight of the roller and your hand should be enough to distribute the ink. Pressing on the roller will hamper it and you risk adding roller marks (*see* 'Troubleshooting').

## TROUBLESHOOTING

Some problems are easy to spot, others may be more subtle. Get into the habit of looking over each print carefully as you go to check that everything is as it should be. It can be easy to miss small glitches, only to notice them later when resolving the problem is more difficult. It is worth saying that some of the 'problems' mentioned here are potentially interesting opportunities for the printmaker, provided they can be controlled and used to the print's advantage.

### Roller marks

These pale linear marks and stripes are made by the end of the roller scraping away ink. If they are accompanied by uneven inking as here, the problem is likely to be due to pressing the roller down too hard while inking. Lines can also be caused by old rollers that have an uneven edge or have ink deposits at the edge of the roller. Rollers, especially budget rollers, can start making these marks towards the end of their lives.

The white scratches are made by the edge of the roller scraping the block. The uneven inking suggests the problem is too much pressure on the roller while inking up.

Take a test print to check whether it is your inking that is making the marks, or a problem with the roller. If it is the roller, try cleaning

the ends and checking the frame is tight and sound. If the roller is old, it may be worn out and need replacing. To save a print, go back and ink another thin layer of the same colour over the marks to hide them.

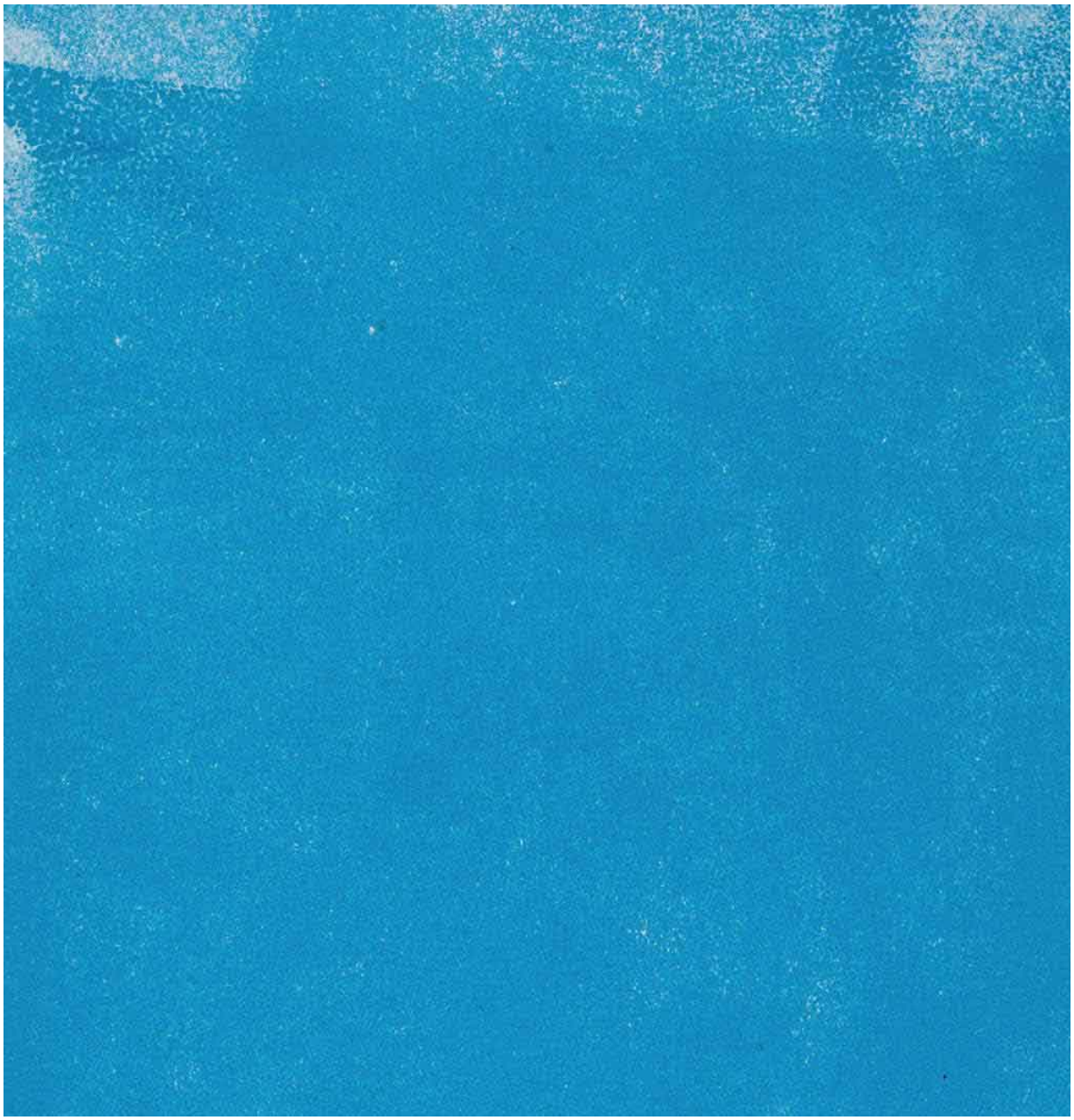
## Patchy inking

Be careful to ensure your first layer of ink has good coverage if you want to avoid patchy inking later in the print. If the first layer you print is patchy, it will be difficult to get flat coverage in the following layers. Following layers of ink will tend to skip any unprinted spots of paper and lie on the printed areas more readily.

Patchy inking can be resolved by double printing: going back and printing a second layer of ink over the first. Be careful to avoid over-inking to compensate. You may need to use a hand tool, like the bowl of a spoon, to apply direct pressure to specific areas to even out patchy inking. If the patchy area is small and it won't compromise the print, patting a small amount of ink onto the print with the pad of a finger can fill in a patch without the need to re-ink completely.

## Over inking

Learning to judge the amount of ink needed for a block takes experience, so don't feel bad if you flood your blocks occasionally. If there is too much ink on the print and the detail has gone, start again. Remove the excess ink from the lino either by cleaning it completely, or by taking an impression onto an absorbent trash paper like newsprint before you print again. If there is too much ink on your roller, push the excess ink to the top of your inking slab and roll out the remaining ink on the roller onto the inking slab to redistribute it more thinly. If you have used an additive (*see* 'Additives and modifiers for ink', this chapter), the ink may have become too fluid as a result. You may need to add talc to compensate.



Checking the block carefully before taking the print can help to avoid missing or under inking the block. If in doubt, tilt the block to the light to make it easier to see how well the ink is covering the block.

The print on the left has been over-inked at the expense of the fine detail. There is also some unwanted pick up in cut away areas spoiling the design. The print on the right shows the crisp cutting and detailed design as intended.

You may be able to save a slightly over-inked print by blotting. Use newsprint or an absorbent paper and lay it very gently on top of the ink. If the ink is thick, remove the paper without patting or you risk smudging the print, and repeat until most of the excess ink is removed. Once the ink is thin enough not to ooze, you can pat the newsprint to remove the remainder. This blotting technique is sometimes charmingly referred to as ‘Tonking’ after Professor Henry Tonks, war artist and later the Professor of Fine Art at the Slade School, who used it to revive and adjust his oil paintings.

## Smeary or watery prints

Smeary uneven inking when using water based inks can be due to the ink drying too fast and becoming tacky on the roller and block (*see* ‘Drying retarder’, this chapter). Check the ink is still fluid on the roller and the inking slab and use a drying retarder if necessary.

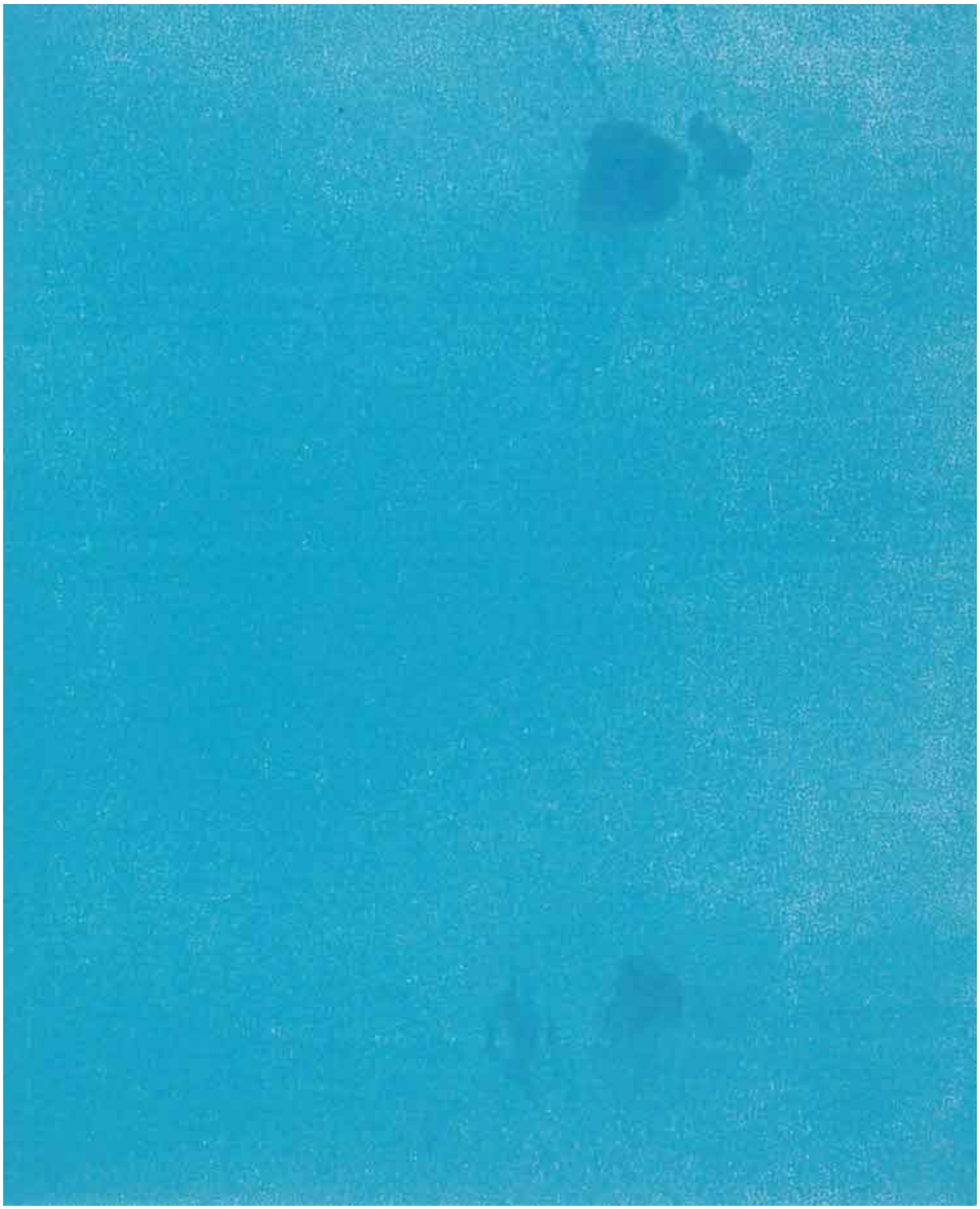
While this is an extreme example, failing to dry the block after cleaning and before inking will cause a smeary or weak print.

A smeary, somewhat watery texture can also be caused by the lino or roller being damp with water or cleaners when the block was

inked up. This is more likely to happen with water based than oil based inks, but always try to use damp rather than saturated rags for cleaning all inks and always make sure that rollers and lino are perfectly dry before you ink up.

## Unwanted splotches of ink

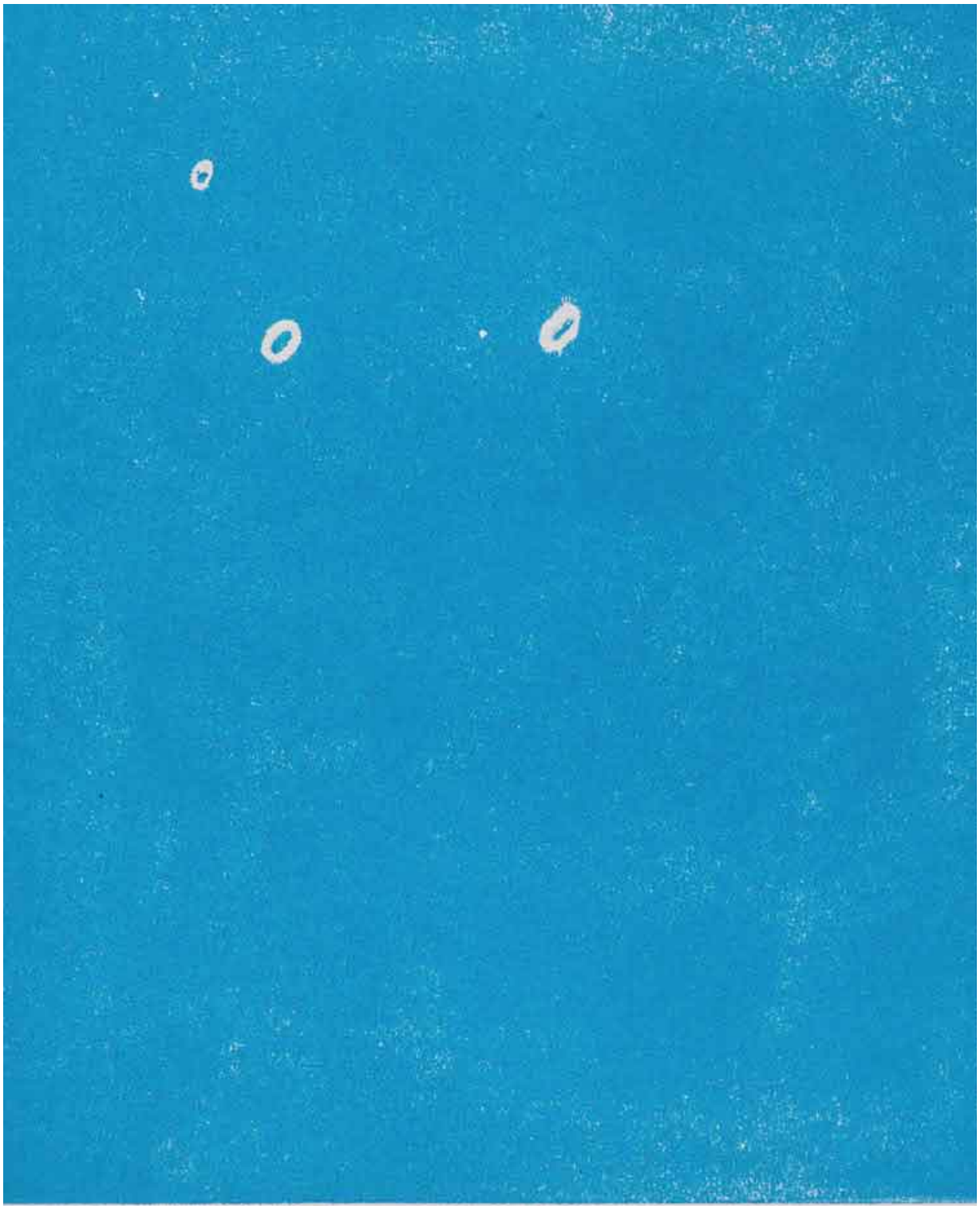
These random splotches are usually caused by ink building up on the bar of the roller during inking up and dripping or catching back onto the roll. The drip is then transferred onto the block and printed. Check the roller regularly and remove any build-up (*see* ‘Extender’, this chapter).



These blotches are drips of ink caused by build-up on the roller. Always check the bar of the roller regularly and wipe clean when needed.

## Unprinted halo

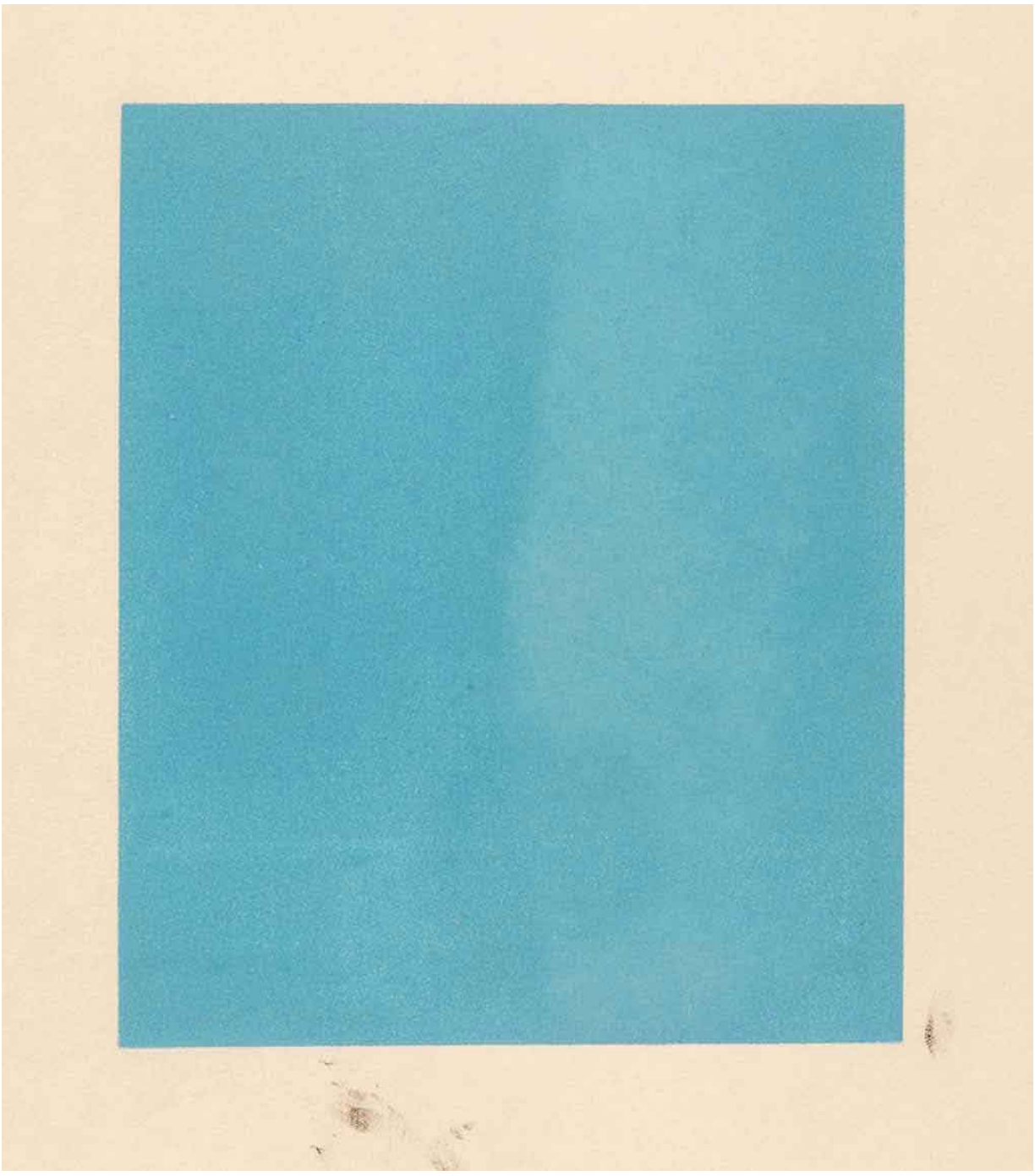
Unprinted circles with an inked spot in the middle, sometimes known as hickies or bulls-eyes, are usually caused by a scrap of lino, fragment of ink skin or other small object being caught in the ink. Check whether the scrap is on your print, the roller or the lino block and remove. Use the pad of a clean finger to pat the ink gently to fill in the un-inked area on your print. If the paper has been embossed by the scrap of debris, gently rub it flat again from the reverse side using a bone burnisher or similar rounded tool once the print is dry.



These white spots are caused by small scraps of debris. Always brush the lino thoroughly before printing and check there are no fragments of skinned ink in the mix when rolling ink.

## Unwanted ink marks

Sometimes printing inks appear to have magical properties and unwanted ink can appear, apparently from nowhere, to spoil a print. Learning to work cleanly is important. Make sure you have clean rags for wiping your hands and surfaces regularly. Keep the printing space as clear of clutter as you can and have a dedicated area, preferably the inking slab, where you can rest any inky tools or rollers. Get into the habit of cleaning away inks as soon as you have finished with them and having a wipe round before you begin on the next colour.



Keeping hands and working areas scrupulously clean while printing should be enough to resolve rogue ink spots, but in truth they may still happen as if by magic from time to time.

Removing unwanted ink from a print is extremely difficult and not something I would recommend for water based inks. If you are using oil based ink and the unwanted mark is small and if the print will otherwise be discarded, then cleaning is worth a try. Use a

completely clean, soft eraser or a very fine sandpaper to gently rub away the ink.

Erasing works best when the unwanted ink is lying on top of a layer of ink rather than directly on the paper. If you are working with ink direct to the paper, you will need to be extremely careful with the eraser or sandpaper. Most printmaking papers, especially *washi*, will damage very easily when rubbed, so test on a scrap of the printing paper first. Once you have erased the ink, you will need to smooth down the surface of the paper. You can buy beautiful agate paper burnishers for this job, though the more economical bone or plastic tools are excellent. It is helpful to have a clean dedicated tool, but you can improvise by using something with a smooth rounded surface. Smooth the paper back down by rubbing gently and don't over rub. If you are investing in a bone burnisher, take the time to polish it completely smooth before use. A clean leather strop will do this polishing job well.

## Ink lifting from the print back onto the lino and/or tearing paper

If you find ink is pulling off the print and sticking back onto the lino, or the paper is sticking to the lino during printing, the problem will be to do with the ink's texture. This is far more likely to be a problem with water based ink.

The ink has become over tacky and is sticking the paper down to the lino. Tacky ink may cause paper to crease as you try to remove it or, as in this example, tear the surface of the paper on removal.

Water based inks dry quickly and ink can become tacky on the block, especially in hot weather. It can also happen if you are working with very thin layers of ink, wiping ink for decorative effects, or using uneven inking techniques. Overly tacky ink will stick to the block as well as the paper and may tear the paper or grab the previous layer of ink off the paper's surface leaving it back on the block.

Wiping down and drying the lino between each inking usually resolves the problem where inking techniques are the cause. The constant cleaning will prevent any ink residue on the block from having time to get tacky. Speed of printing can also be an issue, so take the impression and lift the print from the block without delay to minimize the chance of it sticking. Using a drying retarder can help, especially if the problem is the weather, rather than the way you are inking the block, but be careful not to overdo it.

Sometimes paper tears during hand printing because it is overworked. Your paper should be robust enough to withstand hand rubbing, but no paper is indestructible. If there isn't enough ink on the paper, check the block actually has ink remaining on it to transfer to the print. No amount of rubbing will transfer ink that isn't there. Getting to know your papers along with plenty of printing practice will help to resolve this issue.

## Spoiled prints

Consider repurposing discarded prints. Some printmakers like to crop prints down and use them as mini prints for swapping and exchanges, others chop them into bookmarks, collage with them or use them as greetings cards. Just because a print may not be good enough to sell as it is or to be included in an edition, it doesn't mean it always has to be destroyed.

Spoiled prints often come to life again when they are repurposed. Adding a border often helps.

## CLEANING UP

It is important to clean up properly and promptly. However boring clearing up wet ink may seem, it is nothing compared to the misery of trying to clean up once ink has dried. Inky rollers are especially vulnerable and likely to be ruined if ink dries in place. When cleaning up, work your way from cleaning your block and rollers towards finishing up with the inking slab.

Always wear protective gloves for cleaning up. Keep the amount of cleaning agent to a minimum. For the sake of the tools, the lino, you and the environment, clean up should owe more to effort than an abundance of cleaning fluid. Make a collection of old cotton rags and

towels, paper trimmings, newspapers and old magazines for cleaning. Divide rags up into very dirty, cleanish and new. If you use oil based inks, store dirty rags in lidded containers to keep them safely away from work and to reduce fumes.

## Cleaning up oil based ink

Oil based inks can be cleaned with traditional solvent like white spirit. Opt for low odour white spirit if you can. There are also alternatives to white spirit in the form of citrus based cleaners designed for use with artists' oil based inks and paints available. Some printmakers like to use vegetable oil for cleaning up. It should be noted that vegetable oil doesn't clean by breaking down printing ink, it just dilutes (extends) it. If you use this method, make provision for dealing with oily rags and any residue very carefully to avoid the risk of inky oil spreading to clean areas, or onto prints and papers.

- Wipe the lino carefully with rags and a little cleaner, working from dirty rag through to clean rag to remove the ink. Be gentle and never scrub at the lino or you may remove your drawing or damage delicate cutting.
- Remove as much ink as possible from the roller by rolling it over newspaper or the pages of a magazine. Next wipe the roller with rags as for lino, paying attention to the sides of the roller and the frame. Never pick at a roller with a palette knife to remove debris when cleaning, it may damage the surface. Use a cloth if you can, or resort to gently working off the debris with your gloved fingers.
- Save any ink you can re-use. Scrape any remaining ink off the inking slab with a palette knife, wiping it onto newspaper or paper trimmings. Once you have removed as much ink as you can, use rags with a little cleaner to wipe the inking slab clean. Finish by wiping down with a cloth damped in water and polishing dry.
- Check with your local authorities if you have concerns when it comes to disposing of cleaning waste and unwanted ink.

## Cleaning up safe wash or water based ink

The procedure is much the same as for oil but using soap and water instead of solvents. Small inking plates and trays are the only things

you should consider immersing in water.

- Use rags damp with soap and water for safe wash inks, remembering to wipe away any soapy residue before drying. Most water based ink can be cleaned with water alone if preferred.
- Avoid getting the lino too wet and never immerse it in water. Always make sure to dry it thoroughly.
- Try not to immerse your roller in water; the frame can rust if water is trapped inside the roll. Always dry thoroughly.

### Protecting hands

Protecting your skin is very important and it's best to wear gloves for cleaning up ink. Disposable gloves come in a variety of latex, vinyl and nitrile materials, but a pair of re-usable washing up gloves is also fine for clean-up work. Always follow safety instructions when working with driers or with any additive that specifies gloves for protection. Some printmakers prefer to work in gloves the whole time, but that is a matter of personal preference. I never print in gloves and only use them for cleaning up.

If your hands are bare, get into the habit of using a barrier cream for protection. Remember to replenish the cream whenever you wash your hands. Washing hands, odd as it sounds, is best done as infrequently as possible and preferably in cold water. Frequent washes in hot water will stress the skin and make it much more susceptible to irritation.

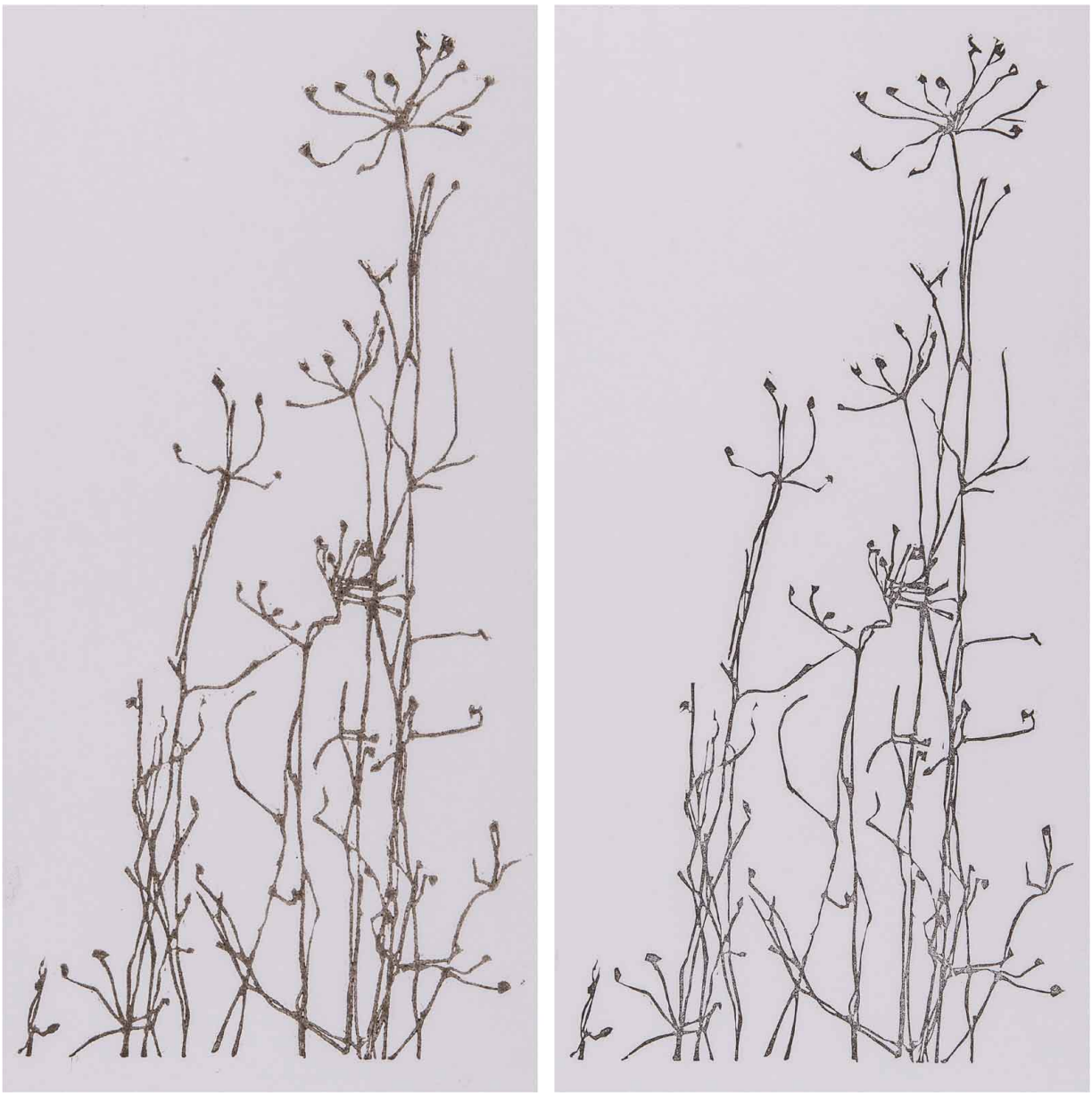
## ADDITIONAL INKING TECHNIQUES

The methods mentioned here may cause your prints to have variations to a lesser or greater degree. Printmakers are not machines and even a consistent rainbow roll may vary slightly from print to print. Some of my prints have noticeable variations, especially when I have 'painted' mixed colours on the block with small rollers. I have never found this to be a problem in making or selling work, but it may not suit you. If you prefer for your prints to be

as identical as possible, some of these techniques will not be for you.

## Scanty inking

Inking with very little ink on the roller can be useful. The less ink you use, the paler the ink will appear to be and if you use very little, the ink will become transparent.



A layer of extremely thin ink is preferable to extended ink for fine detail: the left print was taken using a grey ink consisting of a mix of extender and black ink. The print on the right was made using a transparently thin layer of black ink and results in much crisper detail.

For standard inking, transparency is best achieved by adding extender to ink. The extender maintains the body of the ink, allowing you to roll out and ink up with an appropriate amount of ink for good coverage. However, extended inks can be a little sticky and are not ideal for inking very fine detail. In these circumstances using a very

thin layer of coloured ink will give the transparency of extended ink, but keep the detail crisp.

Scanty inking over larger areas of lino will result in a more textured effect, creating a slightly patchy surface. This is a matter of personal choice and an approach I often use in my work. It is important to be able to balance this scanty approach with the ability to ink in smooth even layers where needed, otherwise the finished print will risk looking clumsy and under-printed.

## Rainbow rolls and colour bleeds

A rainbow roll is a useful technique in reduction printing allowing you to create a more complex range of colours in a print than plain inking.

While rainbow rolls can be bright and colourful, they are also an excellent way to add subtle gradations of colour and tone. From left to right: full rainbow roll, rainbow of ink and extender, half rainbow with a bleed of ink to no ink.

These same three inks and rollers have been used together to ‘paint’ the lino in three very different ways to create the example prints seen here.

To create a rainbow roll, use as wide a roller as you can for your block or for the area you want to ink. At the top of your inking slab lay the inks out in a single row, colours touching. Roll out exactly as you would normally, catching ink down from the reservoir of ink at the top. The more you work the ink, the subtler the blend between colours or tones. Be sure to keep your roller in the same orientation as the colours to avoid mixing up the rainbow. Rainbow rolls can consist of several colours, two colours, or a bleed of tone from light to dark. They can be startlingly bright or a very subtle effect.

Colour bleeds, where coloured ink and extender is used to make a rainbow roll, rather than differently coloured inks, give a gradation of solid colour fading to invisibility. This mimics the light to dark gradations characteristic of traditional Japanese woodblock prints. It

is a useful technique for misty effects. A similar effect can be achieved by putting colour at one end of the roller and leaving the other side empty. As you roll, the colour will spread across the length of the roller and peter out. This gives a similar effect to a rainbow roll with extender, but is useful if you are concerned that using extender will make for clumsy inking of detailed cutting and a scantier inking would be more appropriate.

## Free inking

'Free inking' is a term I use to describe a method I use occasionally where I work directly onto the block using small rollers and a mix of colours. This technique is akin to painting and takes a little practice. I suggest beginning a free inking session with a trash print or two to get your hand in before you begin inking up the proper prints.

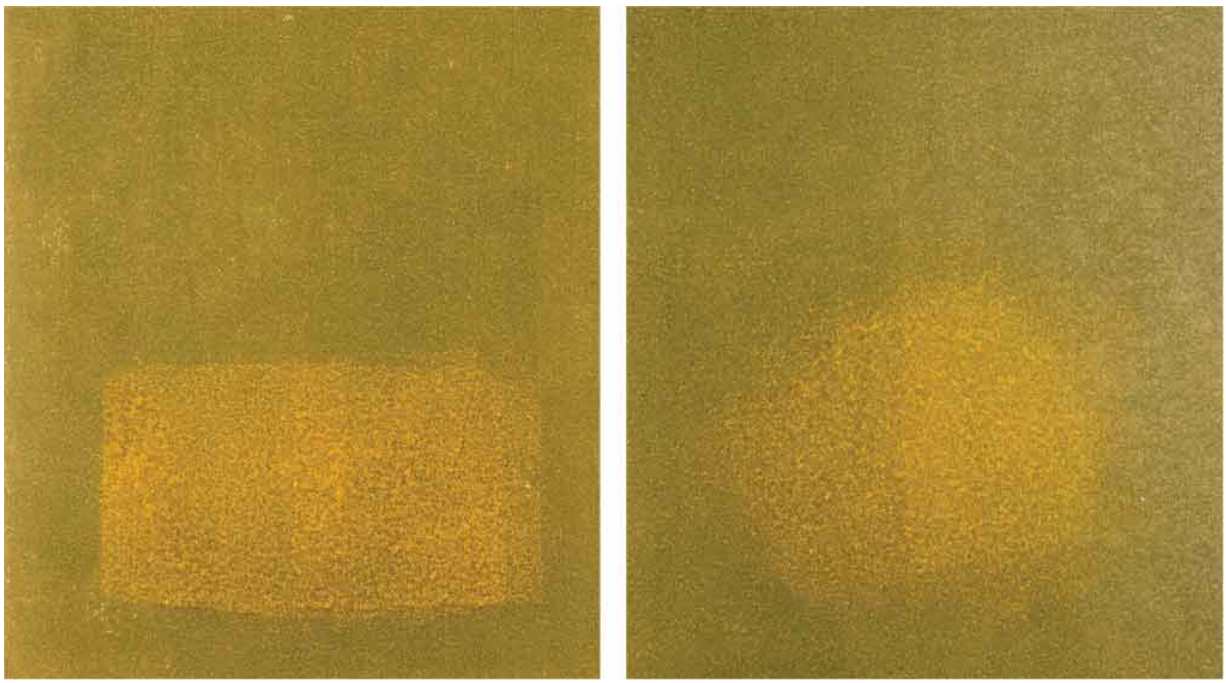
For this method, you will need some small rollers about 6cm (2¼in) across. At this size, cheap rollers are absolutely fine. Go for quantity over quality as you will need a roller for each colour you use. Mix yourself a selection of tones or colours. The contrast between ink colours or tones is a little more subdued on the print than it is on the inking slab thanks to the absorbency of the paper, so up the contrast a little between each colour.

It is important not to press too hard when using little rollers, especially for this technique. Just let your hand flop and the weight of the roller do the work. You can achieve very different effects depending on how you ink: try tapping down the roller to dispense bars of colour, as well as rolling out conventionally. You may also like to load the roller with a patchy layer of ink, or part-mixed colours for a less uniform effect. You will need to re-ink each time you take a print. If you wipe the block between each inking, you will get a fresh 'canvas' each time. If you don't wipe the block, the blend of inks will get softer and have less contrast as you keep printing.

## Partial inking

There are times when it can be useful to only ink a part of the lino as you work. This may be because you are working on a large print and only need a particular colour in a small area. Or it may be that you have an area of great detail that will receive its final colour at a later

layer and applying the current colour all over would only result in a needless build-up of ink.



On the left, an area of the block was partially inked in yellow, leaving hard edges which show through the over printed green layer very clearly. On the right, the yellow inking has been carefully applied to leave soft edges that are far more subtle.

While partial inking can be useful, be careful how you do it. There is a danger that the edges of your inking will show through the over layers as an ugly line where the inking stopped. Be sure that your following colour layers will either be so dark that they will hide where your partial inking ends, or use the roller carefully to soften the edges of your patch of ink when you roll out, avoiding any obviously hard lines. If needed, soften edges by wiping with a rag.

## Using a mask

It is helpful to have a few sheets of polyester stencil film or similar thin plastic to hand in case you want to mask parts of your print. Plastic film has the advantage of being thin, sturdy and wipeable. It is possible to make masks from paper, but ink is likely to build up on the underside. This can leak through onto the print or cause the paper mask to tear. Sturdier card may cause embossing on the print

and is not advisable. I have a folder with a collection of masks and re-use the film repeatedly.

With the use of a mask and an additional block, this print’s design was temporarily changed from a flock of birds to hearts for Valentine’s Day.

A mask can edit out an area of the block and allow you to drop in a temporary additional block for a change of image. Masking can also be useful if you want to avoid inking a specific area of the print until another layer, or if you want to isolate and expose an area of the lino for specific inking. Masking areas where lino has been cleaned away is an effective way of ensuring the print will be free from chatter. A mask used in this way will also prevent any ridges in the cut away areas from embossing on soft papers (*see* Chapter Six, 'Pressure and Registration').

- Cut the mask to fit your needs, a simple task as most plastic sheets are translucent, if not transparent. Check that you can flip the mask on and off the area you want to mask with ease.
- Attach the mask to the lino using tape on one edge to make a hinge.
- Flip the mask out of the way and ink up as usual, flip the mask into place and print and repeat as needed. Remove the mask occasionally to wipe it clean and to replace the hinge if needed.

## Wiping

Using a rag to wipe away some ink once the block is printed can add striking texture to a print. It naturally creates a much softer effect than cutting away at the block. As with free inking, this takes practice to achieve the desired result. Use a lint free rag for wiping, not paper towel or anything fluffy; you don't want stray fibres in the ink. Using a very slightly damp cloth with water based inks and safe wash inks will have a more dramatic effect, but be careful, you don't want any water left on the block.

*Approaching Storm, Highlands* – a combination of wiping and scanty inking gives this print its delicate textures.

## Ghost printing

A ghost print is created where the block has been inked and an impression taken, then the block printed again on different paper without being re-inked. The second print is the ghost print. This method can be useful if you want good coverage over a large area of the print with a subdued and subtle effect. Ghost printing can work better in this context than scanty inking, which would give transparency, but not the coverage. To do this, ink up and print first onto spare paper and then directly onto your print with no additional re-inking of the block.

*St Abbs Looking North* – the faint linear texture on the foreground is created by ghost printing ink after first printing onto textured paper.

Ghost inking can also be used to transfer a texture to a print. Ink up the block and print onto the textured item of your choice – paper, material and so on and take a print. Then print the lino without re-inking onto your proper print to transfer the texture onto your print.

## Printing wet-on-wet and printing wet-on-dry

Since reduction printing involves layering ink, you will have to decide whether to print again while your underlayer is wet, or to wait until the layer is dry before you proceed. As ink builds layer on layer, the drying process will slow. Initially, drying is speeded up by the absorbency of the paper as well as in reaction to the air. Once the paper's surface is sealed by ink, this advantage is lost and the drying time slows. Drying times also depend a lot on the thickness of each layer of ink and, in the case of oil based inks, whether or not you use a drier.

*Late Summer Sun* – the first few layers of the sky of this deliberately romantic landscape were printed wet-on-wet for a softer effect.

With water based inks it is always best to allow each layer to dry before printing again. Water based printing ink can become very sticky as it dries and may well pull the surface off your paper if you attempt to print while the under-layer is tacky. Printing wet-on-wet will increase the likelihood of the paper distorting (cockling) with moisture. In addition, water based ink is naturally more inclined to feather along the paper fibres than oil based ink, increasing the likelihood of an overly blurred result with wet-on-wet printing.

When using oil based traditional or safe wash inks, waiting for each layer to dry before applying the next is the best way to achieve clear crisp detail. That said, oil based inks are much more

accommodating than water based inks and it is possible to overprint slightly tacky ink successfully, especially if you work in thin layers. If you prefer to work with a thicker layer of ink, it is best to wait for layers to dry properly. Printing onto thick tacky ink could create smudges or pull the surface of the printed layer off the paper and back into the lino block as you work.

There are a few occasions where deliberately printing several layers of ink without any drying between layers can work. Done well, using thin layers of ink, it gives a soft focus effect. I sometimes use this when printing skies. Proceed with care as it can make areas with lots of cutting look clumsy and blur detail.

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CHAPTER 5

# Ink Rollers/Brayers

A good roller (brayer) is key to printing linocut well. I consider a good roller to be the single most important tool in a lino printmaker's kit and the item most deserving of your money. Whatever your printmaking style, your choice of roller is every bit as important for the end result as choosing your cutting tools, inks and papers.

A roller is sometimes seen as something of an afterthought when investing in printing kit; a means to slap ink onto the block once the exciting designing and cutting is done. In fact it is a crucial tool. Your choice of roller can make the difference between consistently producing the inking results you desire and clumsy, unpredictable inking.

One of my soft Japanese rubber rollers in action, picking up a small amount of ink from the inking slab to avoid overloading.

## TYPES OF ROLLER

Rollers come in a vast array of sizes and prices. Most modern rollers are made from rubber, nitrile (a synthetic rubber) and polyurethane. The more expensive rollers tend to be made from nitrile or polyurethane. Rollers come in a range of styles with metal frames and wooden or plastic handles. Larger rollers may have double handles or if they are spindle rollers, have a handle at each end like a rolling pin. At the cheaper end of the market, rollers often have the handle, frame and roller sealed together and cannot be taken apart for cleaning. Beyond budget rollers, most can be disassembled for maintenance. Rollers may or may not have a built-in stand to hold the cylinder suspended while it is not in use, or a stop to prevent rolling when at rest.

My rollers hanging out of direct sunlight and ready for use. It is important to make sure rollers aren’t resting against each other.

## UNDERSTANDING SHORE

The softness of rollers is measured by one of several ‘Shore scales’ invented by the rather magnificently named Albert Ferdinand Shore in the 1920s. The softness or hardness of a roller and its place on the Shore scale is important: it will affect your inking and the outcome of your print.

While hard rollers (above 60 Shore) are excellent for other forms of printmaking, they are not ideal for linocut and will require much more effort to give a good result on lino than a softer roller. A hard roller requires a perfectly flat surface to pick up and deposit a consistent layer of ink. Since cut lino is seldom perfectly smooth, a hard roller has far more potential for skipping or dumping ink on the lino’s surface than a softer roller, giving an uneven result. Hard rollers are also more prone to leave roller marks when inking large flat sheets of colour and require more care than a soft roller for inking areas of detail fully.

If a roller is too soft, it could cause problems by depositing ink into the cut away areas of the block and filling in shallower details. However, you are very unlikely to find a standard roller soft enough to cause these issues. If you do come across very soft rollers, they are likely to be budget rollers made of foam or sponge, or have a soft surface layer specifically designed to hold a large quantity of ink. These are usually designed for printing on textiles.

In terms of Shore, a roller between 25–40 Shore will give you a good result. Budget rollers, even soft ones, tend towards the harder end of this range and above. Mid-range rollers have a wider Shore range, usually down to about 30 Shore, while premium rollers go down to 25 Shore. Very small rollers are an exception to this rule. A hard roller with a roll about 6cm long or less is small enough to be able to pick up ink and transfer it to the lino with acceptable consistency.

## BUYING A ROLLER

As with cutting tools, it is best to buy your roller from a printmaking specialist, ideally in person, so that you can ask advice and feel the rollers before you buy. If you don’t know the Shore of a roller and

can’t ask for informed advice, go for a roller that has some give when you squeeze it with your fingers.

If you can’t find out what Shore your roller is, your fingers will help to discern the amount of give in the roll. Here I am squeezing a soft Durathene roller of 25 Shore.

The rollers on the left are designed to hold the roll suspended when not in use while the black roller on the right has a stop only.

As well as picking a roller with give, it is important to choose a roller that is comfortable in your hand, feels well balanced and has a cylinder that spins freely. Check that you are happy with the weight. Obviously, the bigger the roller the heavier it will be, but some makes are heavier than others. Look at the gap between the roller and the metal bar that supports it (spindle rollers are an exception as they have no bar). A wide gap between bar and roller means less ink will splash up and cling during printing. This makes it far less likely that you will get a build-up of ink that could drip back onto the roller as you work. Cleaning and maintenance will also be easier.

The more printmaking you do, the more rollers you are likely to want to own. Once you have some experience, you will know which sizes and which type of roller will suit your printing. A roller at least 16cm across is a reasonable place to start if you are a beginner working with prints up to A4 size. If in doubt, it is better to go for a roller that is slightly larger than you think you need. It will make

inking up flat sheets of colour much easier and you can use it for smaller blocks as well as large. Bear in mind that the diameter of the roller will also affect how much ink is deposited in each pass: thicker rollers will travel further. You are unlikely to have a choice of thickness with budget buys, but it may become an option when you upgrade.

If you begin with budget rollers, consider improving your collection of rollers to mid-range over time, when you have a better idea of your requirements. While budget rollers may be satisfactory to start with, you will get better performance with a mid-range roller, especially as you become more experienced and you start to make more demands of your equipment. Premium rollers are an absolute joy but are a serious investment.

## Stands and stops

You should also consider the pros and cons of a roller with a stand. There are rollers with and without stands at all prices. Some rollers have built in stands while others are designed to rest on the metal cross bar holding the roller. Some rollers just have a little metal stop to prevent the roller from moving once it is put down. While you are printing, a stand allows you to rest the roller safely with the inked roll suspended in the air. It prevents the roller from falling off the bench and protects the rolled out ink from developing a ridge where the roller rests (*see* ‘Inking up’, Chapter Four). It also makes safe storage easy, provided you have a place to store the roller on its rest. A stand is almost certain to mean that you can only use the roller in one orientation, the stand will be in the way of rolling and inking if you use the roller the other way up. If you like to use rainbow rolls in your inking (*see* ‘Rainbow rolls and colour bleeds’, Chapter Four) this will be an advantage as the stand will prevent you from muddling up your rainbow roll through inadvertently reversing your roller. That said, it can be very convenient to be able to flip a roller while inking, especially if you are working in a small space, and you may find a stand irritating. It is very much a matter of personal choice.

A stop is for preventing the roller from moving if you put it down and usually consists of a little piece of metal near the handle. It will

not prevent a ridge of ink forming on the roller if you leave the roller resting, nor will it protect the roller in storage.

## Budget rollers

Budget rollers are generally made from rubber. They usually have plastic handles, with a metal section to hold the rubber roll and are not designed to be taken apart for cleaning. Some have a bent wire handle that can be taken off for cleaning. The budget end of the market is where you will be most likely to encounter very hard rollers that may cause you printing problems. Do check that the roller you buy has some give when it is squeezed, unless you are buying a very small roller. There is nothing wrong with budget rollers, provided the roller is smooth and soft enough to ink up well. They won't be as durable, or as easy to clean as the mid-range or premium rollers, but will be perfectly serviceable. You will have to work a little harder and be diligent to get the smooth, even results that come easily with a superior roller, but that is no bad training when you are starting out.

Check your budget rollers are soft, as with these blue handled rollers from Essdee that come with a built-in rest. The little red roller also has a rest and its wire handle can be removed for cleaning. It is a hard roller, but at this small size (6cm) it will still ink lino well.

I use soft budget rollers with plastic handles for teaching. These get very hard use and perform surprisingly well. They are fairly durable when used and stored correctly. I also use little hard rollers with bent wire handles for occasional teaching and for my own detailed inking. They have a fairly short lifespan, but are cheap enough to replace regularly. They are lightweight and handy for small work.

## Mid-range rollers

A mid-range roller is also likely to be made of rubber, have a good quality frame and may have a plastic or a wooden handle. In this price range you can expect the roller to come apart for maintenance.

Mid-range rollers will be more durable than budget rollers and easier to use, giving consistently smooth and even results with less effort. They tend to be in the 30 to 60 Shore range.

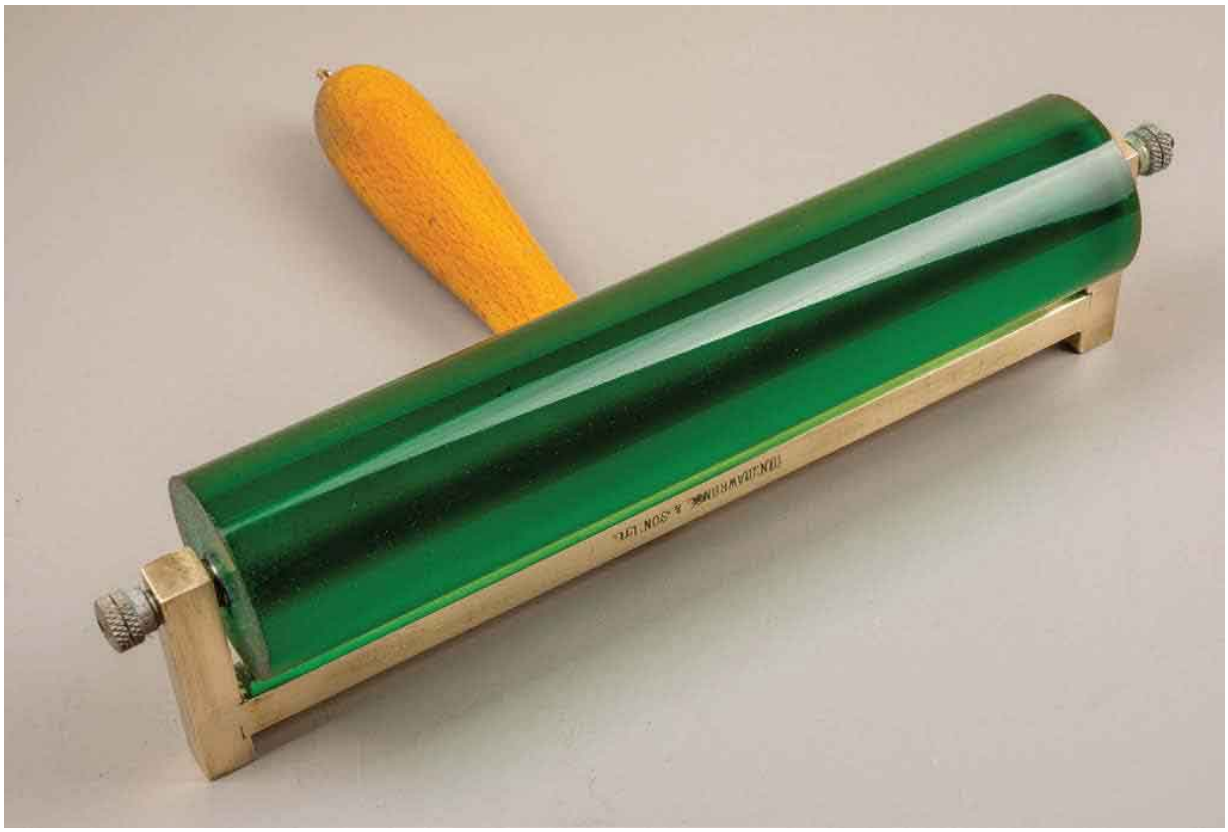
These are rubber rollers from Japan, the black roller on the left is soft while the red roller is slightly harder, both work well. These types of rollers make up the bulk of my collection.

There are some excellent rollers in the mid-range price bracket that will meet all the demands of many printmakers. As always, check that the roller is soft enough for use with lino. Most of my rollers are in the mid-range price bracket. I tend to favour soft Japanese rubber rollers, but that is just personal preference. You may also see mid-range prices for rollers referred to as ‘student’ grade. This is to distinguish them from the manufacturer’s premium grade rollers. They will still be very good quality rollers.

## Premium rollers

Premium rollers are without doubt a serious investment, but they are the most durable of the rollers, designed for decades of use. Their

rolls have the widest Shore range and may be available in a choice of thickness as well as length. Premium rollers are likely to be made from nitrile or polyurethane. They will have sturdy and well-balanced frames and handles, and will dismantle for maintenance. Some manufacturers may offer a reconditioning and repair service for their premium rollers. You may also be able to buy replacement rolls to use with the original frame.



This is a premium quality translucent green Durathene (a type of polyurethane) roller with brass fittings, made by Lawrence Art Supplies. It's my favourite type of roller.

While premium rollers are superior performers across the size range, they really come into their own for large prints, especially where you are dealing with the challenge of inking large areas of flat colour. In these circumstances, using a premium roller with a low Shore and an absolutely smooth and consistent surface will give an excellent result with less effort, saving time and energy. While I would love to replace all my rollers with premium ones, in reality I

have three large wide premium rollers and the remainder of my rollers are mid-range price.

### Buying second hand

Be wary of buying rollers second hand and don't bother with cheaper rollers unless they are a pristine bargain. You need to be sure the roller is in good condition, or your prints will suffer. A damaged roller is much harder to fix than second hand cutting tools, if not impossible. Check the roll has no dents, that there is nothing embedded and that its surface is not degraded. Ideally ink up and test print, or at least ask for a video demonstrating the roller in use. Confirm the frame and handle are sound and can still be dismantled properly.

It may be worth paying for a premium roller with a sound frame and damaged roll on the understanding that you will replace the roll and are paying for the frame and handle only. Check this is possible and affordable first. If the frame is very old, designs and sizes may have changed.

## ROLLER CARE AND STORAGE

If you take a few simple steps to care for your rollers they will last for years, if not decades. Never store a roller resting on its roll as this will distort and ruin it over time. Leave rollers safely on their rests for storage if you have the space. Alternatively you can screw an eyelet to the handle and hang rollers. Be sure they aren't in contact with each other and can hang free if you have several. It is important to store your rollers away from direct sunlight or heat, so choose a storage position away from windows and heaters. Some rollers are sensitive to UV light (nitrile in particular) so you may prefer to store rollers in a cupboard.

Damp can cause problems for rollers, rusting the frames. Hopefully your workspace will not be so damp as to cause a problem, but if you have any concerns, store rollers where air can circulate. Giving the metal parts of your rollers a light wipe with oil from time to time is good for general maintenance and will certainly

help to protect them against damp. The camellia oil mentioned for use with cutting tools would be ideal for this purpose. Some printmakers like to dust their rollers with talc to keep them dry in storage.

Avoid resting the roller on its roll for long periods while you are working. Apart from it being bad for the roll, you will create a ridge of ink on the roller and in the ink where it is rolled out. You will have additional work to smooth the ridge before you can resume inking. Either use the roller's rest or a stand to hold the roller suspended when you pause work. My stand is no more than a sturdy length of cardboard tube taped upright to a heavy board. It's not pretty, but it holds my rollers upright.

Rollers will pick up dust when stored. It is important to remove any dust before use. Wipe rollers with a damp cloth, essential if you use talc on the roll. Dry them thoroughly before using.

Giving rollers a thorough check on a regular basis will keep them in good working condition. This one is clearly in need of a frame clean.

### Maintaining rollers

The everyday cleaning of inky rollers is covered in ‘Cleaning up’ in the section on inks. While thorough cleaning after use will keep the roller in good condition day-to-day, a proper check over from time to time is advisable.

Take the roller apart if you can, keeping any small parts safe. Check that the frame of your roller is clean with no build-up of hardened ink. If there is hardened oil based ink on the metal frame, gently remove it by scraping with a blunt palette knife. Water based ink can be removed by washing the frame with warm water and soap. Always avoid immersing your roller in water if there is any danger of metal parts remaining damp and rusting inside a handle or the roll. Make sure everything is completely dry and wipe metal parts over with a cloth and a spot of oil before reassembling, checking that the roller spins freely and the handle is tight.

## IMPROVISED TOOLS

There may be times when you need to ink up an area of lino and your roller is too large or the wrong shape for the task. A small circle of leather, filled with cotton wool and tied into a little ball will give a circular pad that can be useful for dabbing ink into small spaces or for circular marks. Either use it by hand or strap it to a stick. An artist’s Mahl stick will do the job, but is an expensive option for a tool easily improvised at home.

An improvised dabber made from a scrap of leather, padding and a chop stick for printing small or circular areas of ink.

The sun in this print *Light Study, Glow* was inked up using white ink and the pad of my finger.

If the area is very small, the pad of your finger will ink the block. This is best done for areas no bigger than your finger, as inking up anything larger in this way is hard to do evenly. Always remember to clean your finger immediately after use!

It is possible to apply ink to the block with brushes. This is not good practice for the normal inking of a block and brushes are no substitute for a roller. However, if you are looking for a decorative monoprinting effect, experiment with a brush. Synthetic brushes and cheap hog bristle brushes, especially decorators' brushes, work better than softer brushes.

If you are looking for deliberate controlled brush marks that you can repeat, you will do better following my instructions for cutting lino to mimic a brush mark in 'Cutting techniques', Chapter Two.

## SURFACES FOR ROLLING OUT INK

If you have a permanent set up, try to organize as large an area for rolling ink as you can manage. It is easiest to roll out inks while standing, so have your surface at the right level for your height. You may need to raise the work surface, or use a step to raise yourself to be comfortable. Make sure everything is fixed and sturdy; rolling out is energetic work.

My studio inking slab is made from an old shower door supported on padded cloth (sold as tabletop protector). Here you can see the holes in the glass for the original hinges.

For a permanent area, the best surface is glass. A heavy sheet of toughened clear glass with ground edges for safety, such as a plain glass shower door or glass tabletop is perfect. Ideally this should have a white backing so that you can mix colours accurately. A sheet of white paper under the glass will do the job, but will need replacing regularly. In my studio I use a shower door that I laid over a length of padded table protector. This slightly padded fabric is waterproof, available with a white surface and holds the glass firm. It also prevents the glass from rocking and protects against potential breakage in use. Acrylic is a lighter weight option and a good one if you need your inking slab to be portable. I use old acrylic double glazing sheets for teaching and when I need a mobile inking space in the studio. For a white backing on clear acrylic, degrease the acrylic by washing with soap, dry it and sand one side with fine sandpaper. Wipe it down and coat the sanded side with a white primer suitable for plastic to give a white underside. Smooth ceramic tiles and

children’s plastic paint trays are a makeshift option, but are far from ideal for everyday use.

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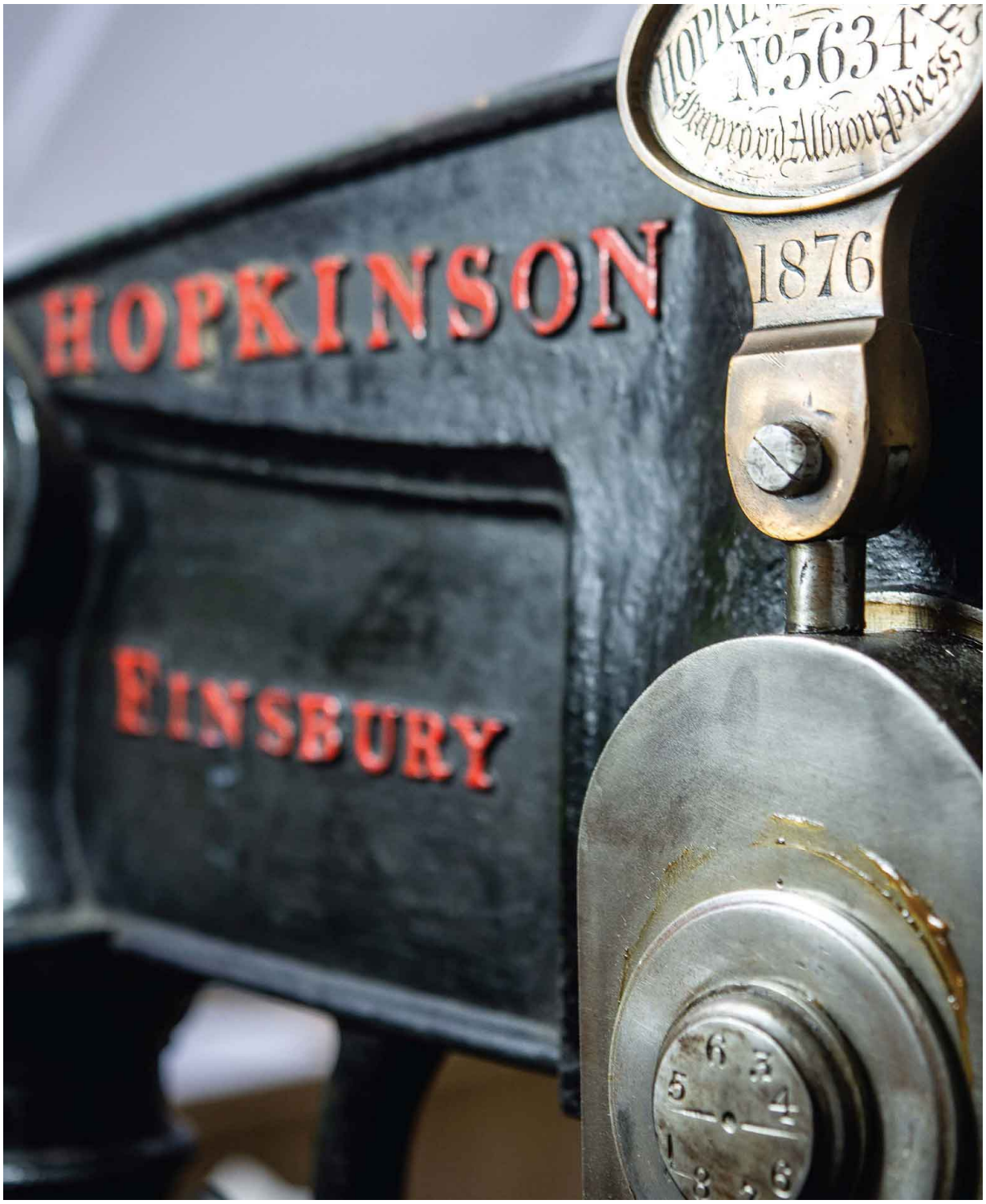
CHAPTER 6

# Pressure and Registration

This section addresses the process of taking a print: how to line up the print for accurate colour printing and how to control pressure when printing by hand or with a printing press. There is an overview of some common printing presses plus advice on buying and installing a press.




My Albion printing press, it arrived with the lettering lovingly picked out in red enamel paint.

## REGISTRATION

Registration is a commonly used printmaking term covering the alignment of blocks, paper or colour layers, or a combination of the three, during the printing process. A registration system is a method for making sure that the printing block, or blocks, and the printing paper line up in the same way every time. In reduction printing there is only one block, so the registration system must ensure the sheets of printing paper line up with the solitary block for every layer of printing. Multi block prints require a registration system that ensures the multiple blocks line up with each other, as well as the paper. Even a single colour print will require some simple registration if you wish to position the print accurately on the printing paper.

It is important to have a reliable registration system for your printmaking. Accurate registration will result in a clean, crisp print with good definition. It is true that there are some very beautiful examples of misaligned prints. Andy Warhol's screen prints are a classic case of misaligning prints for deliberate effect; the cleverly misaligned registration adding to the 'schlocky' appeal of the finished work. However, there is a big difference between deliberately misaligning a print and the print's registration being outside your control. Get an accurate registration method sorted and then break the rules if you feel inclined. There is one caveat I would add: the more creative you are with your inking and the more layers you print, the more likely it is that you will need accurate registration for the print to read well. If registration is off, complex inking that can work so well in a correctly aligned print will look confused and unintentional.

Whatever registration system you use whether you are hand printing or press printing, the most important tip for success is to take your time to position paper and block with great care. If registration involves marking up the paper, make very clear and accurate marks. All registration systems are only as good as the person using them. Be equally careful while taking the print; it is easy to knock the paper or block out of line if you rush or lose focus. Taking a print is the one time I ignore my audience while I am demonstrating; lining up prints and keeping them lined up takes all my concentration.

# REGISTRATION SYSTEMS

There are almost as many registration systems as there are printmakers, but here are four simple registration systems for hand printing. All of these suggestions could be adapted to work with a printing press, but the registration frame and the Ternes Burton pin system come with adaptions to work for hand or press printing.

## A very basic solution

This consists of a sheet of paper fixed to a flat surface. Position the lino block in the centre of the paper and a draw a line around it to mark the lino's position. Draw a second, bigger frame to mark the position of your printing paper. Once you have inked the lino, position it within its drawn frame. Lay the paper carefully on top to fit within the paper's drawn frame and take the print.

A sheet of paper will create a workable registration system for simple prints, but it requires a steady hand.

## Homemade jig

This is a very simple jig that can be made from MDF, thick card or foamboard. It consists of a flat backing sheet with two L-shaped margins firmly stuck down, one on top of the other. The wider L-shape holds the lino in place while the second smaller L-shape on top holds the paper.

This L-shaped jig is simple to make and effective, best made in plywood or MDF for serious use. A quick cardboard version works well for entertaining children with colour printing.

The jig needs to be large enough to fit your largest piece of lino and the wider L-shape should match the height of your lino. Remember to factor in the height and width of the backing block if you mount your lino for cutting. Change the registration corner from the right to the left for ease of use if you are left-handed.

## Registration frame

My husband designed this frame based on the registration system we developed for my own printing press. It is designed for hand

printing or for use on a press. In use, the lino is attached to MDF, mountboard or card cut to fit snugly inside the base of the device. The fit of the lino's backing board in the frame ensures it returns to the same position each time for printing. The printing paper is attached to the hinged top frame with masking tape and its position marked with a pencil, extending the lines marked on the frame onto the back of the paper. To print, the inked-up lino is placed in the base of the device and the frame lowered to bring the paper into contact with the lino to take the impression. The paper is returned to the correct position for each layer of inking by lining up the registration marks on the reverse of the paper.

This sturdy frame is very accurate and prevents the lino from moving during printing. It allows the printmaker to peel back the paper to check the print without losing the registration.

## Ternes Burton pins

Ternes Burton pins can be used for hand printing or on a printing press. These little metal pins come in pairs and for larger prints you

may prefer to use more than one pair. You will also need an accompanying box of registration tabs and a flat board larger than the printing paper. Each pin has a raised nipple and the registration tabs have a corresponding punched hole that allows them to fit snugly over the top of the nipple. The first step is to work out the placing of your pins, lino and paper so that everything is positioned correctly for printing. Once that is done, tape the pins into place on the piece of board and attach paper tabs to the top of each piece of printing paper in the correct place to line up with the pins. Make sure you mark the position of your lino block as you will need to return it to the same place each time you print. When everything is in place, the paper tabs will ensure each sheet of paper returns to its correct position for every impression.

Ternes Burton pins were originally designed for animation work and work very well paired with a base board correctly set up for holding the lino block and pins. This system also allows for easy checking during printing.

# PRINTING BY HAND

Hand printing is often seen as something printmakers only do because they have no access to a printing press. While it's true that a printing press makes things easier physically, especially with larger prints, there is a direct relationship between hand and paper when hand printing that allows for a more nuanced and creative approach to taking the print. Admittedly this tends to suit printmakers who like to manipulate their inking, as opposed to those who work with more uniform flat sheets of colour. While I do use a printing press for my lino work, I often combine it with hand burnishing where I feel it would benefit the print.

*Six Bird Hills* is a twelve-layer reduction print, hand printed onto *Hosho washi* paper. My hand burnishing plays a large part in the textures created in the finished print. The print reads clearly despite the textured inking thanks to its accurate registration.

To make the most of creative hand printing and to check progress, it can be helpful to lift and look at your print as you burnish,

returning it safely to the correct position before continuing to print. Depending on your registration method, you may have to remove and return the print for checking, or you may be able to lift it part way to check it without losing registration.

Hand printing allows you the option to vary the tools used to burnish (rub the back of your print) along with the amount of pressure you exert. Many printmakers have favourite burnishing tools for rubbing the back of the paper to take the impression. I would advise having at least two tools, perhaps more, to apply differing pressures in different ways to suit your printing and the paper you are using.

## Tools for hand burnishing

Anything that suits you, is comfortable to hold, and produces the desired result is a potential burnishing tool. I have seen people use bits of stair bannister, tobacco tins, stones, driftwood, a chapati presser and a wooden bangle among other things. Perhaps more traditional are metal and wooden spoons. Metal spoons are good for exerting strong spot pressure while wooden spoons are less aggressive and better for a more general or gentler pressure.

An assortment of burnishing tools for hand printing lino, all produce slightly different pressures and effects. Clockwise from centre top; a budget bamboo baren, a ball bearing baren, a homemade wooden tool, a metal spoon, a wooden spoon, a glass baren, a cheap plastic baren and, centre, a professional bamboo baren.

Generally speaking, there are two sorts of pressure to exert in hand printing. Wide general pressure and more focused pressure on a specific area. When I teach, I provide students with a plastic baren and a metal spoon. The wide flat surface of the baren provides a general pressure, while the metal spoon allows the student to apply spot pressure where needed.

When hand printing, try to avoid straining your hands and wrists; use your bodyweight instead. Stand above the print and let the weight of your hand and arm provide some of the pressure, with the strength coming from your back and shoulders. If you are working with a traditionally shaped baren, don’t hold the handle. Rest your fingers on it or through it and let the heel of your hand exert the pressure from your arm and shoulder. Take rests and stretch out your hands, arms and shoulders regularly.

## Barens and baren-style flat bottomed tools

A baren is the traditional tool for hand burnishing a Japanese woodblock print. A traditional Japanese baren consists of a flat circular backing piece of laminated paper, wood or card, a coil of plaited bamboo or cord attached to the backing, and a bamboo leaf wrapping twisted around the baren to cover the front of the tool and create a handle. Barens vary a great deal in price and quality. The best barens are handmade and come in several different types and weights. They are designed for maximum sensitivity to allow the printer to feel exactly what is happening between block and paper as they print.

Barens, or baren-like burnishing tools, come in a range of materials including glass.

The lino printing method requires more pressure than the Japanese woodblock process and bamboo barens, though excellent for the purpose, will wear out fairly fast. Japanese printmakers are expected to be able to replace the wrapper on their barens. If you particularly enjoy using a bamboo baren, there are online video tutorials that show how to re-cover a worn baren.

Modern plastic barens are a very affordable substitute for bamboo for lino printing. They lack the sensitivity of the bamboo

baren, but that sensitivity is not quite as important for lino printing as it is with Japanese woodblock printing. Instead of a bamboo wrapper, the underside of the baren is either dimpled or solid polished plastic. The cheaper versions of the dimpled type are solid units and will wear down eventually, but plastic barens with replaceable dimpled undersides are available.

A ball bearing baren is a heavier duty tool than a bamboo or plastic baren and an excellent tool for hand printing linocut. These barens are heavier than bamboo and plastic barens and much more durable. The disc (usually made of plastic) holds dozens of small ball bearings that rotate freely in their housing as the print is taken. Ball bearing barens are fairly expensive and it is a good idea to choose one that you can take apart to clean. Paper fluff gradually builds up inside the baren and will eventually impede the ball bearings.

There are glass barens and some of these are colourful artworks in themselves. They are heavy tools designed for hand burnishing prints. They resemble glass mullers, traditionally used for grinding pigments. Unlike a muller, they have polished bases and more curving sides. They are available in a variety of sizes and are the heaviest baren-style tool. Their weight provides much of the pressure and they provide an even and consistent result. The edge of a glass baren is also useful for spot pressure.

## HAND PRINTING TECHNIQUES

As you become increasingly experienced and familiar with your papers, inking and printing, you will develop a feel for exactly how much pressure to use and where, but here are a few basic pointers.

### Sheets of flat colour

This type of printing requires the highest and most consistent pressure. Use a baren type tool for even pressure over the whole area first. Work systematically in small circles from directly above the print until you have covered the whole area, then work back again in small zigzags. Resist the urge to work fast in big circles or to scrub from side to side at an angle as this will risk creasing the paper or

pushing it off the lino. It is especially important to work with care if your lino is not fixed in place while you print. Check the results and use a spoon for spot pressure if needed in the body of the print and to ensure the edges of the block are completely printed.

With experience you’ll become practised at controlling your inking and hand pressure to produce successful, consistent results.

If you prefer to use a spoon for the whole process, be very careful to work evenly and systematically over the whole block, or you will have lines and marks on your print where your pressure has varied.

## Areas of fine detail cut into lino

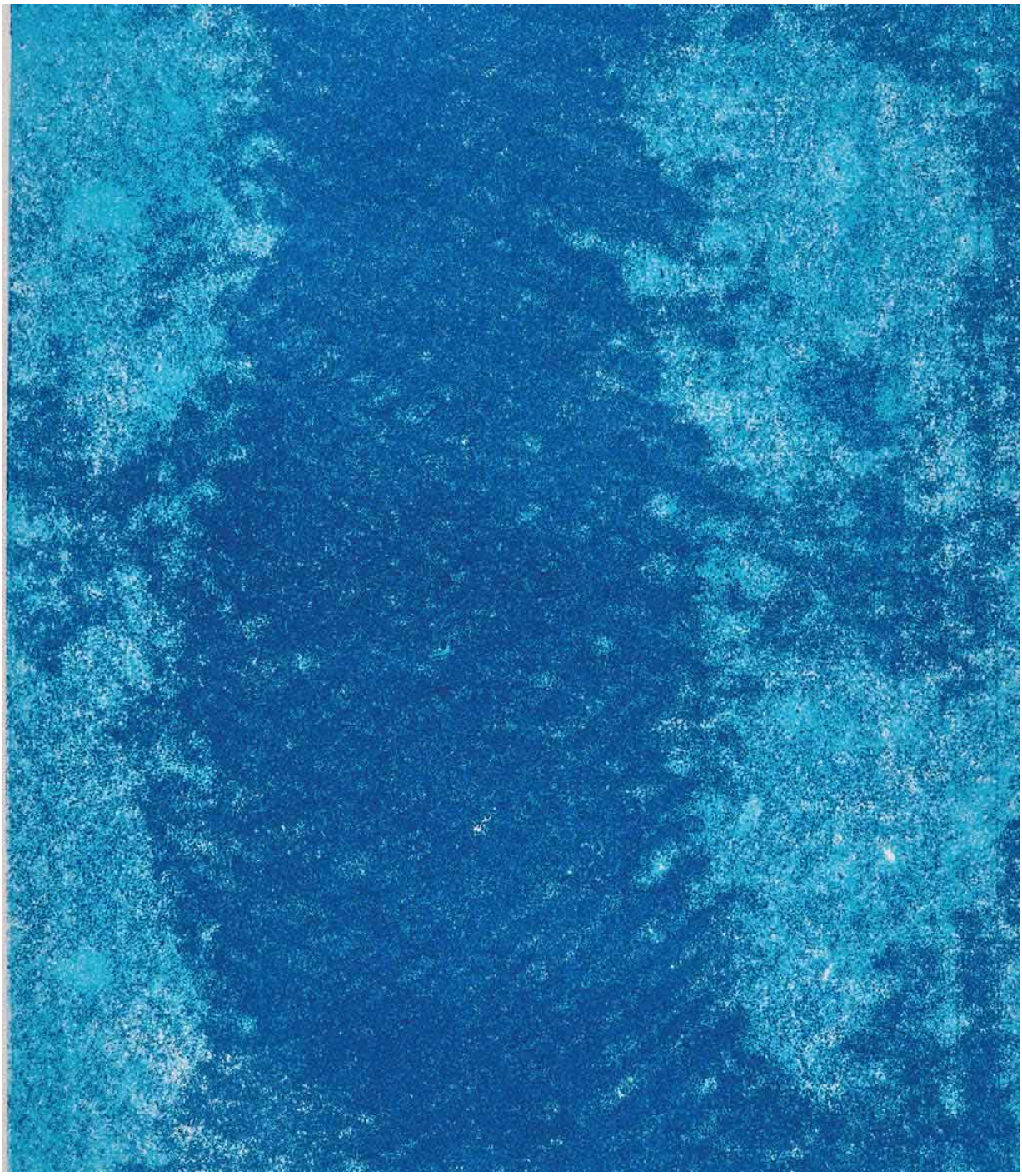
Areas where the bulk of the lino remains and is cut with fine lines or details often need some additional spot pressure to print well. The lino tends to support the paper and keep it from making full contact with all the tiny cutting detail. Always check that the details are printing up crisp and clear. Work the area over using spot pressure if necessary, being very careful not to move the printing paper and blur the detail while you do so.

## Isolated details

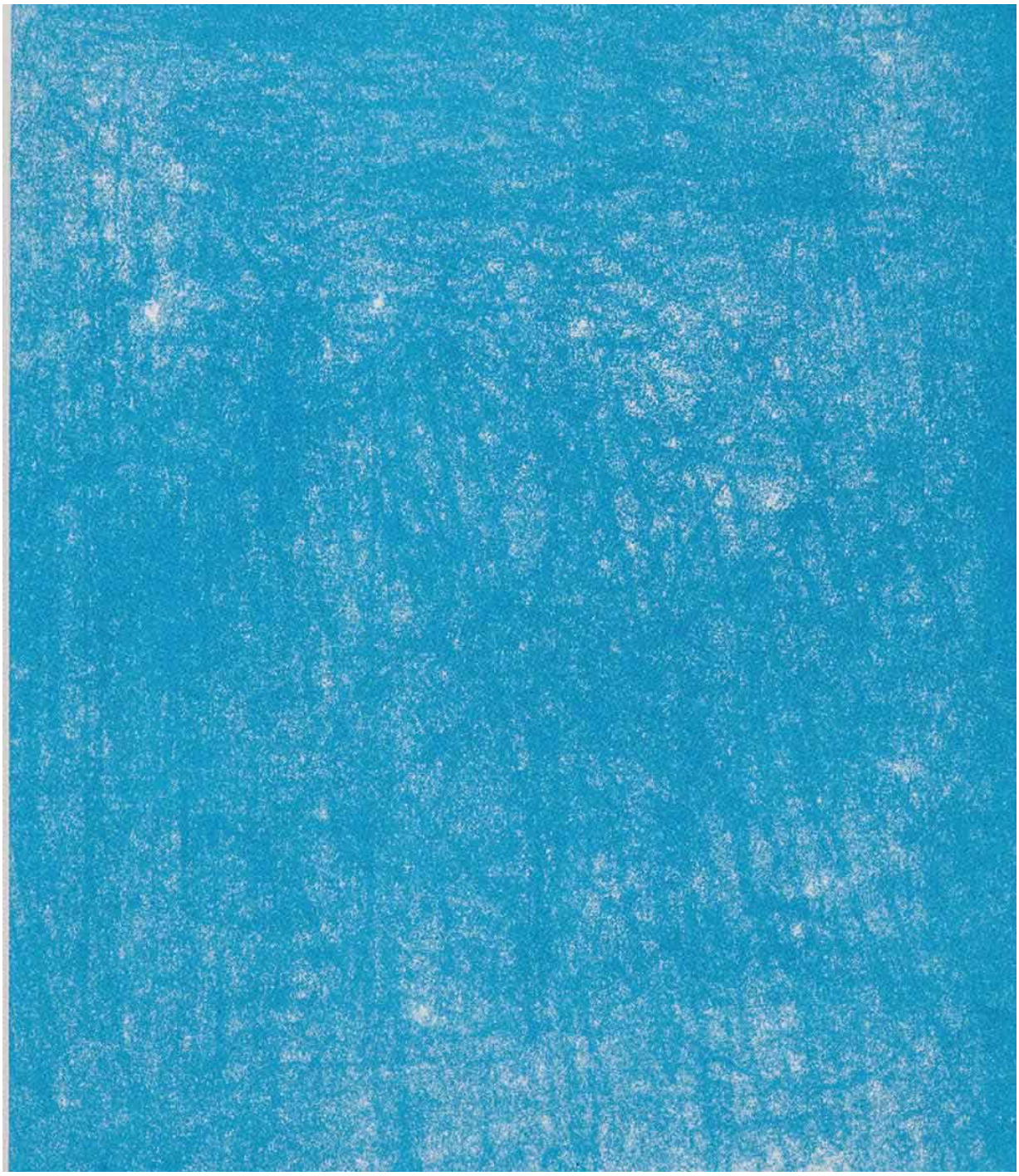
If you have cut away most of the lino and have small, isolated areas left behind to print, then a light even pressure using a baren type, wide-based tool is best. If you try to press with a small tool, it is easy to push the printing paper down into the cut away areas. This can result in the fine detail blurring and looking clumsy, or the paper creasing and perhaps picking up stray ink marks. Spreading a gentle pressure over a wide area is the best way to catch tiny impressions.

## Different pressures for tonal variations

This technique definitely belongs at the creative end of hand printing. The more pressure you exert, the more ink is transferred to the paper and the darker the tone of the ink will be. If you couple that with trying different burnishing tools, you can be very experimental with the inking.



In this example a pale blue layer was printed first; next the lino was inked up with a complete layer of darker blue ink. Using a spoon, the dark blue ink is partially transferred to the paper with selective pressure.



Using the edge of a spoon or baren it is possible to create a decorative pattern of darker lines.

Partial pressure, or putting pressure on a small area of the print, will allow you to drop in areas of colour without cutting. Try printing a layer of colour in the normal way and then re-ink the block and only

burnishing in the areas you want to highlight. This works best with a lightweight paper where you can see enough of the impression to judge where to press. Use thin layers of ink so that you can control where it is added. A thick layer of ink will start transferring on touch and spoil the effect.

If you are looking for a bold graphic effect, use the side of a baren, a spoon or narrow object to burnish the paper. This will give you stripes, circles or swirls of darker tone where the narrow tool is exerting the most pressure. This technique sometimes appears in traditional Japanese woodblock prints where the edge of the baren is used to create '*baren-suji*' (decorative lines made with the baren).

## PRINTING ON A PRESS

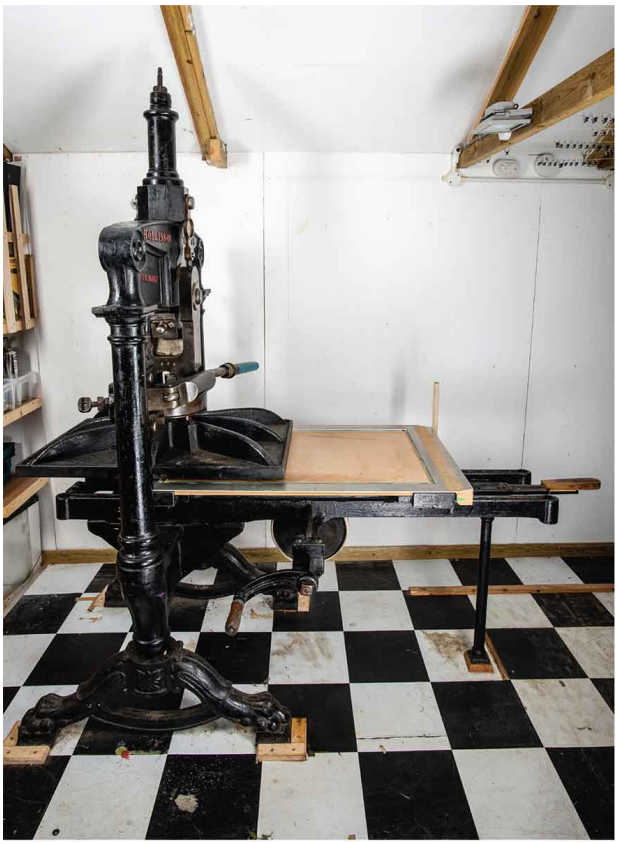
Printing presses come in many shapes and sizes. There are many small variations in the ways presses work and how prints are registered. This section gives a basic overview of some common types of press and advice on choosing and buying a press.

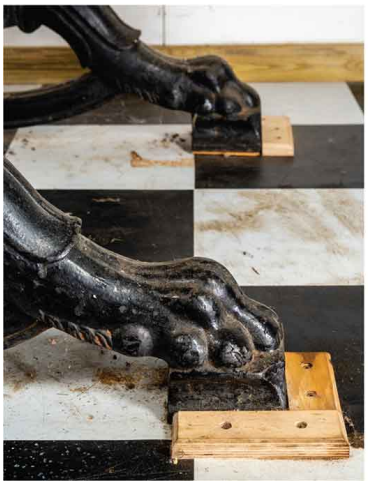
### The difference between relief presses and intaglio presses

The biggest difference between printing presses lies between those designed for the relief process and those for intaglio printing. Relief printing, including lino printing, consists of taking the impression from ink on the surface of the block. As a rule, relief presses exert a flat weight on the whole printing area. Intaglio presses are designed to pick up ink from the cut away areas of the printing block, not the surface. These have a moving bed that passes between rollers. The rollers exert linear pressure to force the printing paper down into the cut areas of the block to pick up ink. Intaglio presses can be used for lino printing with a little adaption and care.

### Letterpress presses

This group of presses are primarily designed to print type. Moveable type has a standard fixed height for ease of use. The term 'type height' refers to this standard measurement.





My own press is an Albion. It was designed to print type and was made in 1876. We fixed wooden battens around its paws to prevent the press from moving.

Letterpress presses range from tiny presses for hand printing one small sheet of paper, to mechanized machines capable of printing reams of paper at speed. Albion and Columbian cast iron presses fall into this group. Letterpress machines all work well for linocut. These machines are set to print at type height so you will need to

raise your lino up in some way when printing (*see* ‘Mounting your lino block to a backing board’, Chapter One).

### Cast iron hand operated printing presses

This group includes Albion and Columbian presses. These presses come in all sizes from tiny tabletop versions to floor-standing machines that top 7ft or more. These machines are much sought after by printmakers. They predate modern automated presses and were designed to print everything from large posters and newspapers to hand bills and visiting cards. They are for relief printing only.

Using a large press of this type can be physically demanding. The printmaker uses a crank to slide the bed of the press under the weight, pulls the handle of the press towards themselves to take the impression and then slides the bed out from under the weight to remove the print. This type of press does take up a considerable amount of space relative to the size of the print it produces, but the general magnificence of their appearance does help to compensate.

### Proofing or galley presses

These presses consist of a bed with raised sides and a roller that slides back and forward across the top. They were designed originally for taking quick and easy impressions to check typesetting and are for relief printing only. The block is fixed in the bed of the press by using ‘furniture’, small adjustable pieces of wood or metal that pack around the block to secure it. The printing paper clips into place and the roller travels over the bed to take the impression. Some presses have inking rollers; others rely on the printmaker to ink the block manually. A proofing press requires the lino to be raised to type height.

This is a proofing press designed for relief printing; note the deep press bed to accommodate type. (Photo: Art Equipment Ltd)

## Starter and small presses

There are several small presses on the market. These include clamp-type presses for hobby use along with die cut machines, Adana presses and screw type presses. Clamp presses are relatively lightweight, simple to use and portable. They are usually made from a combination of wood and metal. Most rely on manual operation, but some have a hydraulic mechanism for ease of use. They are for relief printing only.

An Adana 8x5, a popular small press designed to take type. (Photo: Caslon Ltd)

Die cut machines are aimed at the hobby market and are designed for cutting shapes. They are now popular as a press for making small relief and intaglio prints. They are tiny portable machines and fun for demonstrations and small projects.

The Adana press, invented in the 1920s, was intended for hobby use by letterpress enthusiasts. They are highly regarded by hobby and professional printmakers alike. The most popular version is the Adana 8×5 which will print up to 8 × 5in. The machine's mechanism is manually operated and inks the printing block, takes the print and re-inks the inking roller all in one action. These presses are for relief printing only and the lino will need to be raised to type height.

Screw type presses consist of a central screw that is turned to move the weight down onto the block to take the impression. This

group includes book presses, sometimes called pinch or nipping presses. These are commonly made from heavy cast iron, though some are wooden, and are intended for book binding. Screw presses can be somewhat laborious and unpredictable to use. The block and paper must be manually inserted for each print and the printmaker must work out the relationship between the number of times the screw is turned and the amount of pressure the print requires.

## Intaglio presses

Intaglio presses come in all shapes and sizes. They consist of a travelling bed and a pair of rollers. Unless they are very large, these presses are operated manually with the printmaker turning a wheel or spindles to feed the bed between the rollers. They are more adaptable than relief presses as they will print both relief and intaglio and are a good investment if you want an all-round press.

An intaglio press: the press has two rollers (the other hidden below the press bed) and exerts a travelling line of pressure. (Photo: Art Equipment Ltd)

Intaglio presses do need adjusting to work for lino printing. The roller height must be altered to accommodate the lino block and paper. Intaglio presses exert a moving line of pressure far higher than the flat pressure of a relief press. They must be set up correctly to avoid crushing your lino. Once the rollers are adjusted, there is still a danger that the lino can creep or distort as it is printed. A simple solution is to make a pair of lino runners to sit on either side of the lino at the edge of the bed for even printing. The best way to adjust the press is to begin with the rollers on the high side and run test prints until the rollers are at the correct height and the lino is printing well.

Felt blankets are used for intaglio printing as they help to force the paper down into the intaglio plate. Blankets can also be used for printing lino, but they will tend to push the paper down into the cut away areas of the lino block. It is possible to work without a blanket, or you could substitute pieces of card for the blanket if you want the option to vary the pressure (*see* 'Controlling pressure when printing with a press', this chapter). You will need to set up a registration system or use a registration frame in the bed of the press for colour printing.

### A NOTE ON SAFETY

Most presses are heavy pieces of machinery with moving parts. When installing a press, make sure the press is absolutely secure and can't move when in use. I know from horrified experience that even a 7-ft cast iron press can creep if its bolts aren't securely fastened. If the press is to be packed away, storage needs to be safe and secure. If you have children and pets, make sure they can't get unsupervised access to the press and make sure you don't have any loose clothes, hair or jewellery to catch in any moving parts while you are working.

## BUYING A PRESS

A printing press is a very personal investment. Many printmakers develop a relationship with their printing press that goes beyond the merely functional. I still see one of my old printing presses

occasionally and I am always surprised by how fondly pleased I am to greet it.

It is sensible to consider your options thoroughly when deciding on a press. Fortunately there is plenty of advice online. Watch a few different videos of each press on your list to get an overview of the press in action with different users. Check out whether the press has its own registration system or look for suggestions on setting up a registration system with each particular press.

Here are a few questions to ask yourself beyond those of cost. Try to come up with answers that will give you a press with greatest flexibility of use and size for your printing, as well as your situation and budget. This is a purchase you won't want to be changing on a whim.

- What do you want to do with the press – is it solely for lino, or might you experiment with intaglio or other relief processes?
- How much space do you have for the press and can it stay in that place permanently, or will you have to pack it away between uses? If the press is to be packed away, how easy is that process and where will it live safely?
- Is there sufficient lighting in the area where you are planning to put the press?
- Will the press stand on the floor, or will it need to fit onto a table or worktop for use? If the press needs a worktop, do you have one that is strong, level and stable, or will that have to be part of the purchase?
- How will your press function in its space: is there room to operate it and is there space for an efficient workflow when you are printing?
- What size press do you need for your work now and how do you see your work developing in the future? Might it need a change of size in a year or two?
- Do you have any health or mobility issues that might affect how you need to work with a press?
- Heavy presses need strong floors. Is your floor strong enough to accommodate a press?

If possible, try before you buy. Only you will know if you can work with a particular printing press and until you use it, you won't know for sure. If the supplier can't offer you a test in person, do ensure that the press can be returned if it doesn't suit you. Alternatively, try to find a printmaker with the same machine and ask if you can try their press for size.

### Buying a second hand press

A printing press is the one piece of printmaking equipment that is frequently bought second hand. Presses are very sturdy and most have a long life. If you intend to buy a press second hand, be sure to understand how the press functions or enlist the help of someone experienced in using the same type of press. Check that the press is complete and be very wary of buying any press that is shown in parts rather than assembled as a whole. Check thoroughly for damage, especially any cracks or chips in cast iron presses. Damaged cast iron is likely to be difficult and expensive to repair. On a relief press, make sure the bed of the press and the platen are smooth and flat. They may need a clean, but anything permanently attached to the surface, or any dents in the surface will spoil your printing. The same goes for the bed and rollers in an intaglio press, though damaged rollers can sometimes be replaced. Unless you have seen the press in operation, arrange to take a few test prints before you buy.

Antique relief presses may have worn strapping and wooden parts. These are reasonably simple to replace and shouldn't be a deal breaker when you choose a press, though you will need to factor in the cost of any restoration work needed if you can't fix it yourself.

## INSTALLING A PRESS

### Tabletop sized presses

With a small press, you won't need an expert for moving and installation, but it is still important that the press is level and safe to use. You will need a sturdy, level working area, without any rocking

or movement, set at the right height for you to work comfortably. The press needs to sit level on the work surface from side to side as well as back to front and operate without moving. Presses tend to creep if unsecured. If possible, bolt the press to the worktop. Alternatively, screw wooden battens around the feet or base of the press to prevent it moving. If this isn't possible, add battens or bolt the press to a board and clamp the board to the worktop. If the press really must be portable, use a non-slip mat to stop it moving when in use.

## Large presses

It is vital to be very sure you have the floor strength and clearance for a large press and have sufficient access for its installation. Check the state of the floor; a concrete floor should support a large printing press providing it is in good condition and stable. If you have a wooden floor resting on joists you are very likely to need extra support. Using a large sheet of heavy plywood under the press will help to spread the load and distribute the pressure move evenly, but your floor will still need to be strong enough to take the total weight of the press. If you are in any doubt, you must get professional advice for safety's sake.

In a factory setting, clearance of a metre all round is the industry norm for a substantial piece of machinery. It is unlikely that most studio spaces can manage that, but it does give an idea of the standard space calculated to access a big machine safely and easily. At least ensure that the press can be accessed from all sides for oiling and maintenance, that there is room for the press bed to move freely, and space for you to work comfortably without risking injury.

Large presses will need levelling once installed. This is partly to do with performance and partly so that any oil used to lubricate the press can flow evenly. Some presses will drip oil so be prepared to install a drip tray if you want to keep your floor clean. Levelling is usually best left to an expert and if you are using a specialist to move your press, installation and calibration is likely to be part of the service. The press must be stable on the floor and will need bolting or chocks to prevent it creeping during use.

## CARPE DIEM

Buying a printing press is a big event. My suggestions are aimed at helping you prepare for your purchase carefully and with due consideration, but life doesn't always work that way. I bought my first big Albion printing press because I met a teacher at a party who mentioned her school had 'some sort of big metal press' they wanted to shift quickly. I was careful to have it thoroughly checked before buying it, but I certainly hadn't made any plans or budgeted to buy a big press. I had no studio to accommodate it and we had to set to and build one in a hurry. The press was in place in the studio before the electricity or window glass. It was a huge financial risk at the time, but one I have never regretted. Sometimes presses become available and you just have to take a leap of faith.

## CONTROLLING PRESSURE WHEN PRINTING WITH A PRESS

A printing press will exert greater pressure than printing by hand and that pressure will be more evenly distributed. It is still possible to vary the amount of pressure delivered to the block by the press and manipulating pressure to best effect is a very important part of using a press.

The usual way to manipulate the pressure on a press is by using layers of packing. For relief printing, packing is normally card or paper and it sits between the press and the print. For intaglio presses blankets are normally used for packing, though blankets are better substituted with card when printing with lino if you want to avoid pressing paper into areas where the lino has been cut away. Once the press is set up to print, the pressure can be fine-tuned by adding or removing packing. This approach works with most relief and intaglio presses. Packing can be added under the print, but will take more effort to adjust. Packing between the printing paper and the weight of the press will also help to protect the printing paper and keep everything clean.

## Varying your pressure

As a rule, the more uncut lino there is to print, the more pressure is needed. Printing a sheet of colour on an uncut block will require a lot of pressure. Printing a few details at the end of a reduction print, when most of the block has been cut away, requires very little pressure at all. In between these two extremes there are degrees of pressure to be exerted for best results.

For packing my press, I have six pieces of 300gsm hard, smooth card cut to the size of the press bed and I add and remove cards throughout the printing process. I work with three or four cards for most of my printing when using my usual printing paper, but can begin a print by heaving on the press with all six sheets of packing in place and finish with no packing at all, just dabbing the press down on the printing paper. Some printmakers go further and use newsprint alongside card to refine their pressure, sometimes in specific areas. I occasionally add a few sheets of newsprint to refine pressure, but if a specific area needs a little more pressure, I do that by hand with a spoon.

Bear in mind that packing will need to be added and subtracted depending on the kind of paper you use. Over time packing sheets will compress and soften and you may need to add in more packing to get the same pressure. Packing will need replacing over time. Always take some test prints if you have replaced the packing completely as new packing will exert more pressure than the older material.

## Keeping an even pressure

Relief presses that rely on a flat weight to exert pressure require the weight to remain level to keep the printing pressure even. If you print a block where one side of the lino is cut away and the other side is intact, the weight has no support on the cut away side and can tilt towards it. This will reduce the pressure on the lino to be printed and affect the impression. The solution is to either leave behind enough lino to counterbalance the weight or to add a strip of lino beside the block on the cut away side to compensate for the imbalance.

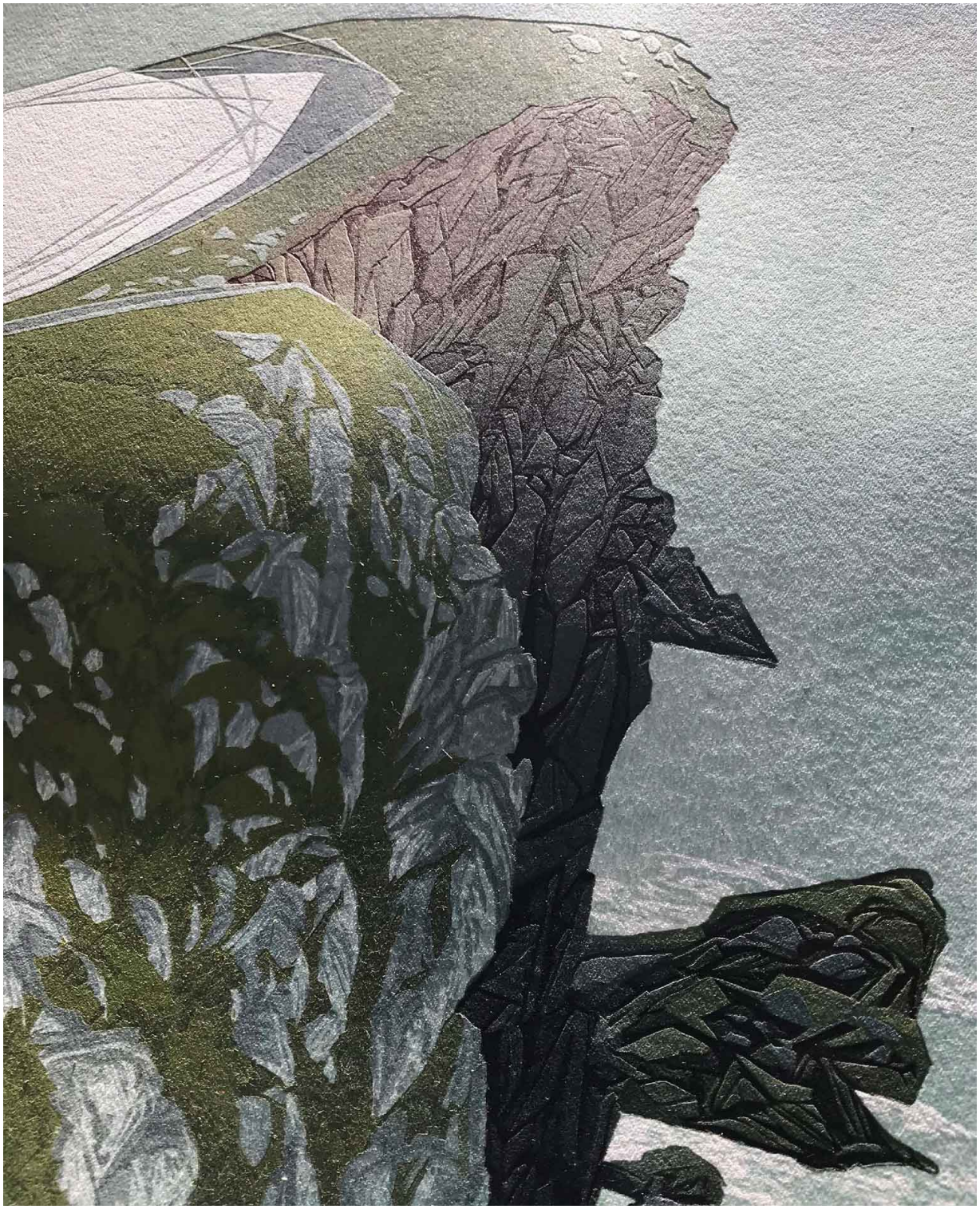
The sky area of this linocut *Limestone Pavement* is left behind after printing to act as a counterbalance for the press weight during printing. Note how I have smoothed off the edges of the sky to avoid any unwanted embossing.

If you leave redundant lino behind to keep the block balanced, it is important that the redundant lino doesn't impress or mark the printing paper in any way and spoil the print. Ensure that there is a big enough gap for you to avoid inking up the support lino when you work on the rest of the print. If you don't have enough space, use a mask to prevent the support area from printing (*see* 'Using a mask', Chapter Four). Bevel and smooth over all the edges of the support area so that it can't emboss the paper during printing. If you prefer to

add a strip of fresh lino to counterbalance the block, make sure that the lino can’t leave an embossed impression on the printing paper, or pick up printing ink.

## Double printing to control pressure

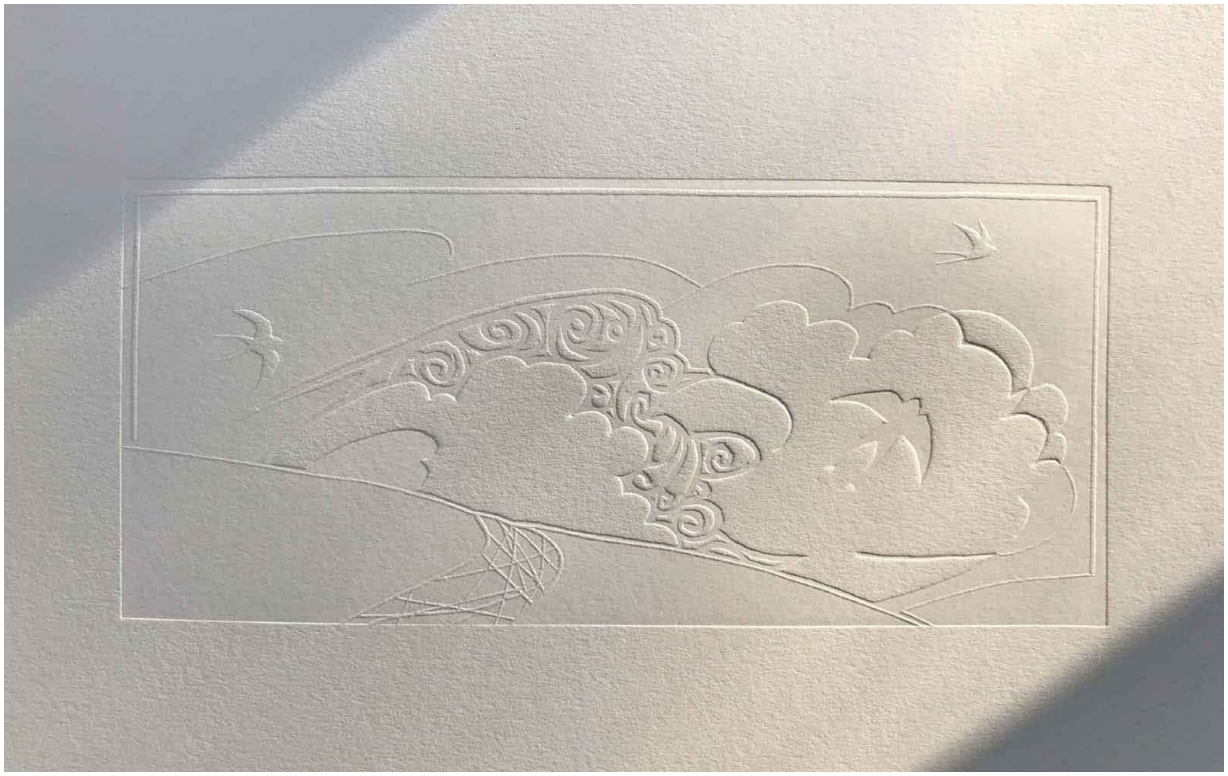
There may be times when you need to ink up a linocut that needs high pressure to print an area of flat colour, but also has areas of detail that require low pressure printing at the same time. I resolve this by double printing. Ink up the large solid areas first, wiping off any ink on the delicate detail, and print at high pressure. Go back and ink the detailed areas, and reprint at the lower pressure needed. The other advantage of this method is that you can also vary how you ink the block, adding thicker or thinner layers of ink for specific areas.



The Fabriano Rosaspina paper used for *Divided Cliff, St Abbs Head* embosses easily in the press and is an attractive addition to the line detail in the print. It is a subtle effect and shown here in a raking light.

## Embossing

The thicker and softer your printing paper, the more likely it is to emboss when using a press. It is a matter of taste whether you enjoy this added dimension in your finished print and like using the kinds of paper prone to embossing. If you do, it's important to ensure that any embossing enhances the work rather than detracts from it.



This blind embossing was done using dry 285gsm Fabriano Rosaspina and a relief press. It is not as dramatic as a blind emboss taken on an intaglio press with damp paper, but still effective.

A paper that gives an emboss, where the cut surface of the lino sinks a little into the paper on printing, will be more likely to catch unwanted inking than a paper that doesn't emboss. The heavier the embossing, the more likely this is to happen. You may also find ridges remaining in cut away areas will emboss on a very thick, soft paper.

Wiping the cut away areas of the print clean between every inking is always sensible if you wish to avoid any inky chatter, but especially important when using a paper prone to embossing.

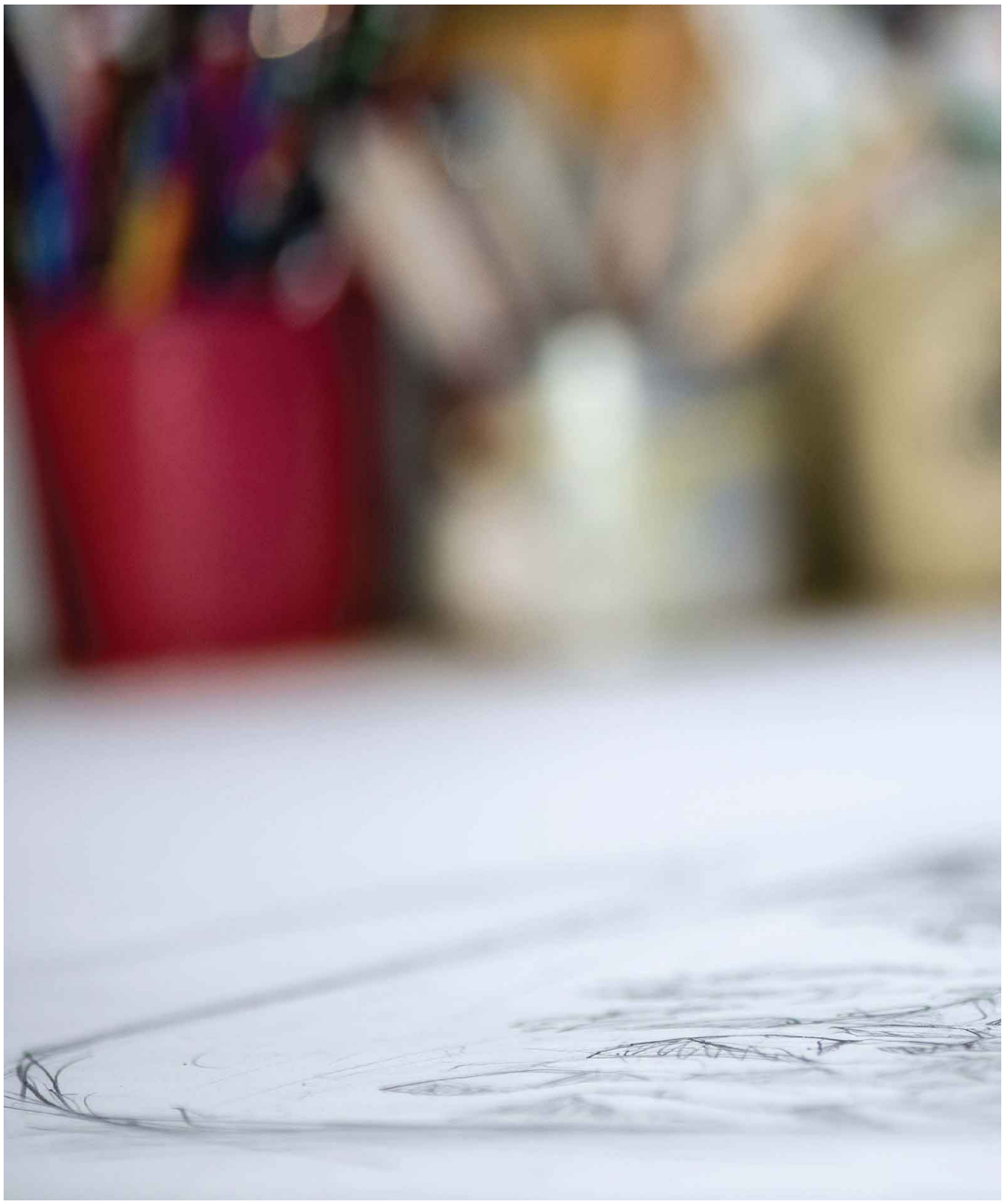
Testing and getting to know the paper will tell you whether it is soft enough to emboss texture from cut away areas. If it is, and you like the effect, you could take advantage of the emboss by leaving deliberate ridges or texture sympathetic to the work as you clear away the lino (*see* 'Chatter', Chapter Two). You will need to be careful to make sure the lino is clean before printing if you want a blind emboss with no ink. If you prefer to avoid any embossing from cut away sections, make sure they are smooth and flat. Using a mask for large areas can help as a buffer against embossing, as can smoothing the area with strips of masking tape, but make sure everything stays clean and ink free.

You may need to adjust your inking slightly with a paper that has a heavy emboss. If you like to work with fairly heavy layers of ink, you may find fine detail a little compromised by the paper's softness. Testing is the best way to work out how much ink is needed relative to softness of paper to give you the best results for your work.

Thick, soft papers are also prone to picking up dents and impressions, and can crease very easily so they do need careful handling. They may emboss around the edges of your print or pick up impressions from the press too, so be sure to set up for printing to avoid any unwanted embossing in this way.

## Blind embossing

Lino will produce a very satisfactory blind emboss. The best results are likely to come from pressing into soft papers about 300gsm weight. Soaking the paper to damp it and then passing it through an intaglio press will achieve the most dramatic effect, but it is possible to work with damp or dry paper using a relief press as well.



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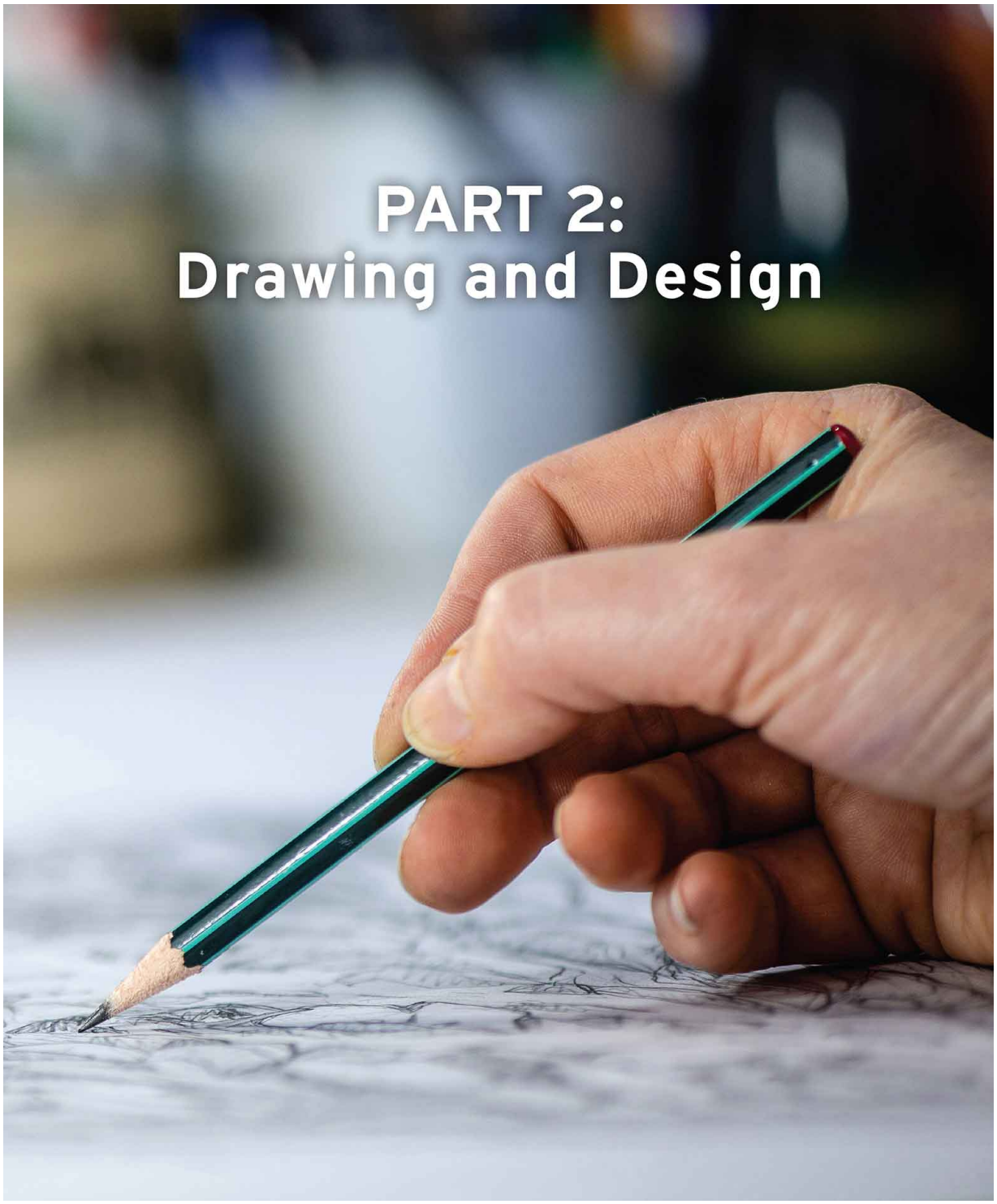


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CHAPTER 7

# From Sketch to Design Drawing

This part of the book is devoted to drawing and design for reduction linocut. It offers practical help to take all the necessary steps from finding inspiration, through working out a design and preparing a lino-ready design drawing, to transferring a finished design onto lino with a plan for cutting and printing. This section will guide you through selecting your source material and editing your initial ideas. It will help you to turn those ideas into a design drawing specifically aimed at playing to the strengths of the linocut method. On the practical side, there is advice for preparing lino to receive your design and how to transfer your design onto the lino for cutting. Finally, there is a section devoted to moving you from the design drawing stage into making a print. Whether you like to plan on paper or learn by doing, there are suggestions designed to help you understand how to divide the print into its various layers, how to make the most of the linocut process and how to think as a printmaker.

Refining my sketchbook drawings into a design drawing to use for tracing and transfer to the lino for printing.

Above and right: A drawing from my Cheddar Gorge sketchbook and the finished linocut *Old Pine*. The journey from sketch to finished print has been one of significant changes.

## SOURCE MATERIAL AND INSPIRATION

All linocuts have to begin somewhere and mine start with observational drawings, backed up by photography. I go out into the countryside, since rural and wild landscapes are the subject of almost all of my prints, and I make a series of sketches and take plenty of photographs. This forms the basis of my source material.

I confess, for someone as besotted as I am by wild cliffs and mountains, I am unsuited to the job of collecting my source material. I'm very alarmed by heights and spend a lot of time sketching flat on my stomach, on the basis that nobody falls off a cliff lying down. I often think with some envy of my husband's grandfather, a successful artist and illustrator, who never drew anything that he couldn't reach in a London taxi.

Gathering your own source material, however challenging, is a game changer when it comes to the outcome of the finished print and well worth the trouble and effort. It is the vital first step to developing your artistic individuality. I would never give up on my drawing expeditions, however terrifying. I like to think that the combination of fear and fascination gives my sketching an edge that transfers to the finished print. There's certainly a lot of adrenaline in the mix.

# USING PHOTOGRAPHS FOR LINOCUT

## Photography for reference

I normally work with photography as a visual reference rather than direct source material. I take dozens of photographs out in the landscape. They act as backup for checking aspects of the drawing and as a source of visual snippets to integrate into a design. These photographs are merely functional and for information. They would fail miserably in any photographic exhibition as I look to them for clarity, not as attractive images in their own right. When I am working on a design drawing, I often use photographs from a variety of drawing trips, old and new, depending on what I am checking. A waterfall photographed in Norway may help me position a boulder or two in the Scottish Highlands.

Sketching at St Abbs Head, Scotland. Observational drawing, whatever the subject matter, will always reveal where your interest and focus lie.

## Working directly from a photograph

I have absolutely nothing against working directly from a photograph. Many printmakers work very successfully in this way, either drawing their own version of the original photo or by manipulating the photograph directly to use as the basis of a print.

*Workers' Hands*, a set of small one colour linocuts. Strong framing and a specific graphic approach suit these industrial scenes and move them away from simple photographic copies.

While it's not my usual choice, I took this approach for a series of small single colour linocuts illustrating the hands of men working in an industrial enamelling factory. It was impossible to sketch on the

factory floor, so I took careful photographs. I cropped the photographs later into a matching set and used them as a direct reference. You can see how the result differs from my usual work. I have adapted my technique to a graphic, one-colour approach to suit the source material.

I do have one plea: if you are going to work directly from a photograph, I urge you to do so because you actively seek the result it gives. Don't do it because you feel you can't draw, or haven't the creativity to come up with your own design. If you fall back on photography simply to avoid drawing, I hope to change your mind in the section on sketching.

### A note on copyright

It is important to remember that all photographs come under the law of copyright. Any person who takes a photograph owns the copyright of that image. It is a breach of copyright for anyone else to reproduce or copy the photograph in any recognizable way without permission, just as it would be for anyone to copy your linocut print for their own benefit.

Importantly, this applies to nearly all photography published on the internet. It is best to take your own source photos for reference, and absolutely crucial if you work directly from a photograph. Alternatively, you can search for copyright-free material that is yours to use as you wish, sometimes for free.

If you want to directly reference a photograph in your work that has been taken by somebody else, you will need their permission to work with their image. This also applies to all the other visual reference sources for ideas and inspiration covered in this book. Copyright does expire and time periods for this vary depending on the laws involved, so it is always worth checking if an item is still in copyright before using it as a reference.

## SKETCHING, OBSERVATIONAL DRAWINGS AND VISUAL NOTE TAKING

### Drawing skills

Drawing is a skill that can be learned just like football, using a mobile phone or icing cakes. Some people have more aptitude than others, but everyone can learn the basics and improve with practice, given time and application. I consider drawing to be very important. It is a fundamental way of seeing and understanding a subject. It is also as personal to you as your handwriting and a part of your individuality. Drawing doesn’t need to conform to ideas of taste, realism or convention; it just needs to be true to you. Please do give drawing a go if you normally avoid it, think you can’t draw, and especially if some foolish grown-up told you that you couldn’t draw when you were younger. Try your hand at observational sketching or inventing your own design drawing for a print. Just like all skills, once you get into regular training it gets much easier to do.

While sketches can be successful in their own right, for me they are primarily working drawings for collecting information.

My sketchbooks are filled with observational sketches and most of it, like my photography, consists of purely functional quick scribbles. A kind of note-taking with lots of energy and very little refined detail. Mostly I am trying to jot down anything that I find exciting: ideas about composition, scale and shapes in the landscape I think may be useful later. I seldom sit and produce a completed sketch of the landscape in front of me. My sketchbooks would likely disappoint anyone looking for pleasing drawings to complement the finished print.

Sinkhole at Buttertubs Pass, Yorkshire. While a photograph gives a helpful overview, it is the sketch that provides the focus – here that lurching drop into the depths.

Drawing gives focus where a photograph will give an overview. The act of drawing will inevitably stamp your personality and interest on the subject matter. I am fascinated by ideas of space and scale. My sketches tend to dwell on areas of the landscape that serve to show these two themes, pulling the parts of the landscape important to me into focus and eliminating irrelevant details. Sketches, however rudimentary, cut to the chase in a way that photographic note taking never can.

It is worth remembering that when you draw, however basic your sketches may be, you will always gravitate towards the thing that interests you most. Understanding what fascinates you about your subject, figurative or abstract, is key to designing a strong print. Following your fascination is the best way of keeping yourself engaged and invested throughout the printmaking process. Drawing is an easy starting point for discovering your focus.

Quick sketches can be an interesting source of ideas for mark making in the finished print. While other parts of the book address cutting and mark making in far more specific detail, it is worth mentioning them in the context of sketching. I like the quick strong marks of my sketches and enjoy the way there’s often a large area of the page left blank around the sketch. I use both in my printmaking. The lines that appear in the finished print tend to be stylized and are very much a part of the design, but their origins are in my sketchbooks.

It’s easy to see the connection between sketch and finished print in this linocut of Cheddar Gorge.

Whether you make notes or mix colours on the spot, personal colour impressions tend to be more helpful later than relying on photography alone.

Colour doesn’t feature much in my drawing. I might draw with colour pencils, but only because they are soft and bold, not for any accurate colouring. Instead I write myself colour notes. That is entirely personal preference, and you may prefer to sketch in colour crayon or paint. Whichever way you sketch, do make a note of the colours if you intend to use them in the finished print. Relying on photography is never as helpful as you might think; the colours always lose something in translation. Colours you mix or note while you draw are much more likely to be relevant to the outcome of your work. I find writing little descriptive colour notes helps me to understand and remember the colours better than trying to mix them accurately on the spot. It also reveals which colours in the landscape resonate with me the most, particularly any colour combinations that I think will be useful later. Notes like ‘Greenish indigo, washy against petrol blue’ may not mean much to anyone else, but make perfect sense to me!

Keep a hold of sketches. It can be very tempting to throw sketches and scribbles out, especially if you aren’t happy with them. Remember that sketches don’t have to be successful artworks; they just need to tell you something. I have a shelf of sketchbooks, plus a drawer in my plan chest devoted to sketches on loose paper, which I look through from time to time. I often find that a sketch needs an incubation period, sometimes years, before becoming the basis for a print. Keeping your sketches and ideas for later gives you both a library for reference and a resource for when you need inspiration.

## Inspiration and reference

The visual language of linocut, in common with many kinds of printmaking, is directly connected to and affected by the print process itself and is very different from that of painting and drawing. The very act of having to cut the lino and print, using a roller and ink to make your finished image will mean learning a new way of describing the world. It’s a good idea to have some help learning this new language, inspiration to keep you going and some references to help you develop your own style.

I study other printmakers constantly and I would urge you to do the same. I am endlessly fascinated by the way other printmakers

work, the marks they cut and the way they print. It's important to relax and feel comfortable looking and learning from other artists. The more printmaking you see, the deeper your understanding of the possibilities for your own practice. The wider the range of your experience, the more options you will have for developing your own visual language. In addition, the more artists you research, the less likely you are to become fixed on one artist and less tempted to bend your work to their style. Be a magpie; chances are there are an almost infinite number of lino printmakers whose style, colours or technique will resonate.

A good learning exercise is to try to work out how a printmaker makes their prints. What are the cutting marks? How have they been made? How many colours are there? Do any overlap and make other colours? Is the ink transparent or opaque? Which layer came first? Even if you fail to come up with all the answers, questioning like this is an excellent way of tuning in to the visual language of linocut. It is worth pushing still further, beyond the practical issues of cutting and inking, and looking at how tone, composition, distance and pattern are controlled, often with very few colours and simple cutting.

I am sure, like any visually interested person, you are constantly looking and learning from almost everything you see, from your neighbour's curtains to the graphics on a takeaway box. Here are some slightly more specific suggestions. As always, remember to look for inspiration to make your own original work, and be careful to respect copyright law.

The work of wood engravers is a particularly rich hunting ground for mark making, especially traditional black and white wood engravings. Wood engravers are absolute masters of single colour printing and expert at controlling light and tone through creative cutting.

Posters, advertising and commercial graphic art are all good sources for learning about composition, design and using colour in a graphic context in almost infinite variety. Personally, I love a good vintage travel poster, but other genres are available, contemporary and traditional.

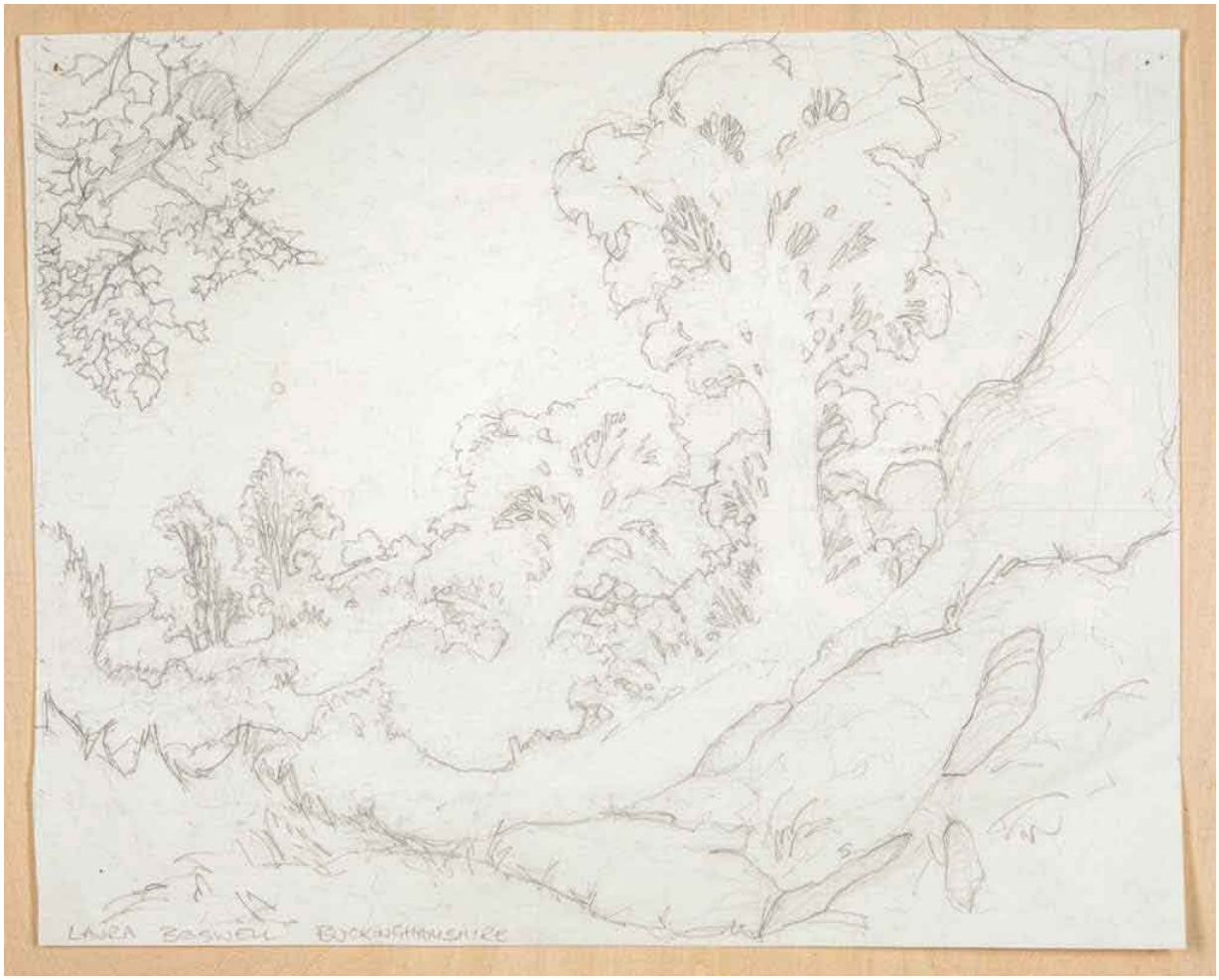
Indigenous printmakers offer a rich source of material and inspiration. I particularly like Inuit stone cut prints. Impressive and lovely as stone cuts are, that one technique barely skims the surface of indigenous printmaking. There is much to learn from a very wide source of cultures and techniques.

Textiles, like graphic art, are an excellent source of inspiration for shape, colour and especially pattern making. If you are nervous about designing a figurative first linocut and would prefer to try something in pattern, textiles offer a rich playground of ideas. Historical textiles are an especially interesting source with many excellent online archives available.

Quality tattoo art is very useful for understanding concepts of balance, simplicity and bold generosity of design. Colour use tends to be restricted and stylized along with the design, and clarity is everything. Tattoos are often very dramatic. They are a good lesson in manipulating subject matter while keeping it easy to read, powerful and lively.

## DESIGNING FOR LINOCUT

I use my sketchbooks and loose drawings for reference. I don’t transfer them directly onto lino for cutting and printing into a finished edition. I prefer to edit them into what I call a design drawing: a mix of information from my sketches, my photos and my imagination cooked up together to make a final drawing suitable for a linocut. This design drawing is the size of the finished print, ready to trace and transfer onto the lino for cutting. This chapter will help you to move from everyday sketching and drawing into making a design drawing specifically to suit lino.



A completed design drawing, the same size as the planned print and ready to trace and transfer to lino.

## General design points to consider

What's the story? Prints, like any other artwork, need to have something to draw the eye and interest the viewer. Part of a print's success comes from nuts and bolts, like composition and colour, but the magic 'something' comes directly from the printmaker's drive to communicate their fascination with some aspect of the subject. Pick a subject with some element that really excites you. Don't settle for working with 'quite nice'. Remember that printmaking is all about deferred results and 'quite nice' is unlikely to keep you enthused through the work of making the print.

Establish the kind of feel you want for your subject matter: for example realistic, stylized, or playful? Might it have abstract

elements? Will it fill the paper or have areas of blank space? Do you want it to be dramatic or delicate? Will it have a formal or a loose feel? Thinking in very general terms about the direction you'd like your print to take is a good way to start focusing in on the kind of design drawing you'd like to create.

Perspective, as you will see from any quick skim through a collection of linocuts, is entirely optional. Depending on your subject and the approach you want to take, try pushing and pulling natural perspective to suit your print. There is something about linocut that welcomes unusual perspective and playful distortions. That said, it is important to know where to stop. There's a fine line between playful and gimmick. Whatever you do to the perspective of your design, it should feed into the strength of the result rather than stealing the show.

Composition often worries beginners when designing prints. There are established conventions when it comes to composition, but I wouldn't worry about the rules too much. Instead I suggest embracing another time honoured approach: working with thumbnail layout sketches. Try to surprise and entertain yourself with the composition, whether the print is figurative or abstract. Experiment with moving areas of interest to the edges or centre, over-size or under-size your subject, try cropping or adding space to your composition, swap around the proportions, bend the perspective and scale – whatever it takes to engage you. This is the approach I take with my work and I pick the thumbnail that interests me the most as the basis of my design (*see* 'Thumbnails' and '*Nōtan*', on the next page).

The simplicity of the beach and colour choices in *Barrow Beach, After the Rainstorm* allow the focus to lie on the tumble of foreground stones, in balance with the abstract clouds.

This little print has a playful perspective with the sky acting as anchor to the dynamic landscape.

*Three Waterfalls* shows a clear balance of simplicity and detail, with the bright white water a point of focus.

Achieving a balance in the finished print is important to help the viewer engage with the print and for it to read clearly. Think about the overall image while you work on your design, colours you might

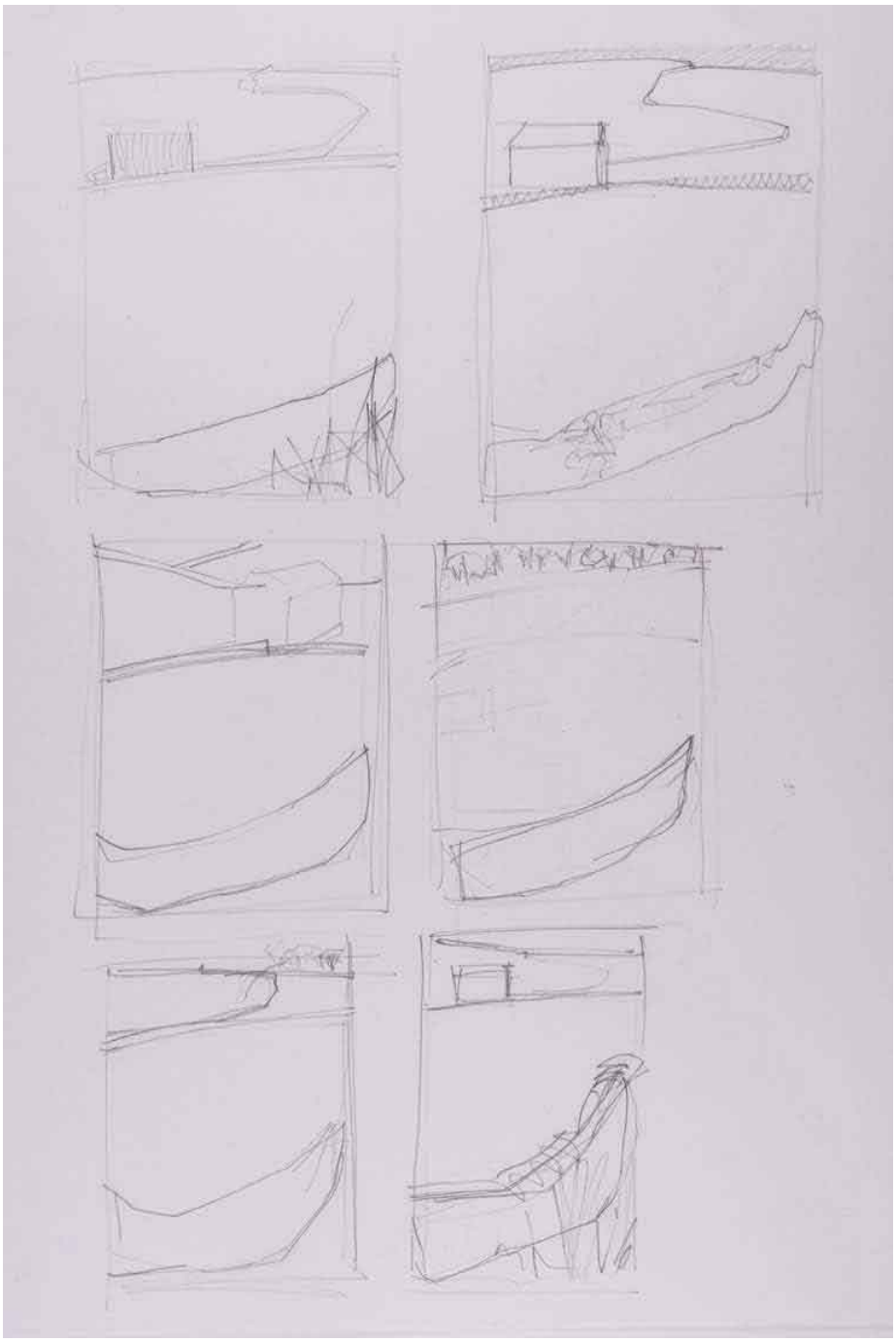
use and the kind of mark making you might be cutting. Designing a successful linocut with the same degree of cutting and interest throughout the print, or with very little tonal or colour contrast, is a much more demanding task than designing one that has areas of complexity balanced with areas of simplicity. The latter option is more likely to be visually more appealing and easier to understand. Think of how you might draw the viewer's eye to areas of interest in the print and how to balance out the design to lead the eye around the print.

Photo-realism is a big ask for linocut and certainly not something I would suggest striving to attain at first even if you do decide on pursuing it later. Instead, explore the graphic nature of linocut. Rather than worrying about making your linocut 'right' to match reality, think instead how you might manipulate reality to suit your linocut. If you are concerned how people will see your work and how they'll understand this approach, remember that the human brain is hard wired to make visual sense of what it sees. Your viewer is more than primed to meet you halfway in understanding your print. Relax and bend the world to your requirements, your audience are natural born champions at joining up the dots!

## EXPLORING INITIAL IDEAS

### Thumbnails

Before I begin on my design drawing, I always make a series of thumbnail sketches. The whole exercise helps me to rough out a game plan for my design drawing. I strongly advise you try giving them a go when designing. They will help you to explore your options even if you plan to work directly from a photograph. I select the thumbnails that look promising and usually follow with quick sketches in slightly more detail. The second series of sketches helps me to develop my ideas further, to edit out any weaker sketches and to plan for the final drawing.



Thumbnails are quick little sketches to explore ideas for a possible print and pin down the composition.

Brush thumbnails working out the shape of a waterfall. These are still thumbnail ideas, but on a larger scale.

I tend to use the term ‘thumbnail’ loosely for any speedy sketch. Usually they are small, but not always. I sometimes use a big Japanese calligraphy brush or a marker pen and large sheets of cheap paper to rough out ideas. If you are prone to getting caught up in too much detail with a pencil or fine pen, the latter approach might work well for making your thumbnails.

Thumbnails make it easier to broaden your design options and to get to grips with the balance and composition of your linocut, both essential if you are new to the process. Each thumbnail should be so quick to create that it’s no trouble to sketch them by the dozen. Anything over-complicated at this stage will make experimenting too much of a chore and may tempt you to compromise on your design rather than keep pushing for the best idea.

Sometimes the process is easy; a thumbnail sketch will appear, perfect for turning into a design drawing. You’ll know it from the jolt of excitement you’ll feel for making the print. If the magic doesn’t

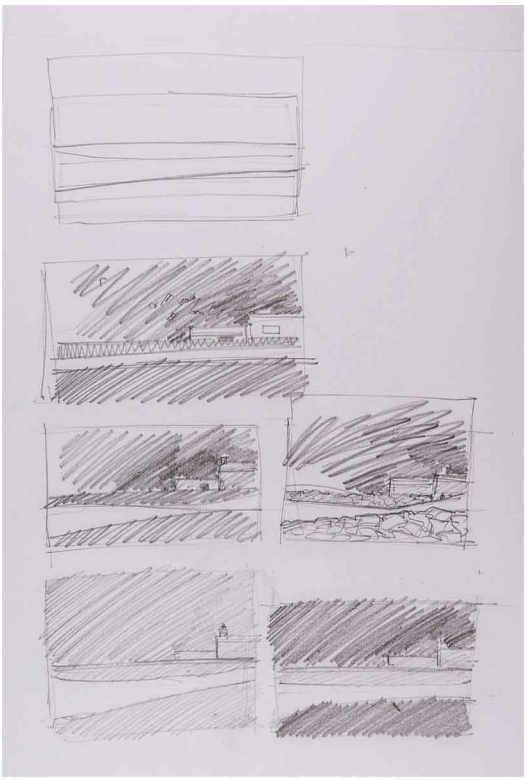
happen, try selecting a couple of thumbnails you think might work and do some further slightly more detailed sketches building on the positives of your initial drawings. Often ideas need a little more developing to bring them to life.

If several thumbnails show promise and you don't want to develop them into a series of linocuts at once, edit them down to the preferred choice, but don't throw them away. I sometimes staple or stick thumbnails into my sketchbook alongside the source material. If I look back for inspiration, the attached thumbnail is a bonus.

Thumbnails are a good way out of creative block. If you are at a loss for ideas and inspiration, doodling thumbnails can be a surprisingly productive solution. They are also a good way to pass the time. I keep a little pad with me for thumbnailing and have come up with several prints over the years due to train delays and dull bus rides.

## *Nōtan*

*Nōtan* is a Japanese term and refers to the concept of light and dark harmony in an artwork. At its most basic, *nōtan* describes the relationship or pattern between dark areas and pale areas in a design. It is a good tool for any artist's toolbox. It is a helpful, simple and speedy way to judge the balance of a design and the strength of its composition. *Nōtan* is by no means specific to linocut, but it is especially useful when learning to play to the strength of linocut's more graphic feel and visual language.



The *nōtan* sketches, above, were a great help in creating the design drawing of this Yorkshire scene and the final print, helping me to work out shapes and how to balance the composition.

To create a *nōtan* sketch, simplify your design down to black areas and white areas. It becomes much clearer to judge how you feel about the harmony, weight and balance in your work with this degree of simplicity.

Working with *nōtan* at the thumbnail or second sketch stage will help you to check your work, to push ideas of composition and to check balance. To push your *nōtan* further, you might like to add a mid-tone grey. This can be helpful to resolving the pattern of light and dark where you need more information to decide on composition. This step is also an excellent way of resolving colour layers for linocut as planning in tone, rather than in a set of different

colours, is very helpful for reduction printing. Adding a third tone works well when analysing designs that lack strong tones or rely more on pattern and detail.

In addition to helping to decide questions of composition, making *nōtan* a part of your design practice is a great help in simplifying complex detail. Adapting the real world, or your previous drawing or painting methods, into the more graphic language of linocut usually means changing your usual artistic approach to an extent and making *nōtan* sketches can help with the process.

*Nōtan* also helps to identify unwelcome patterns or ugly shapes in a design drawing, highlighting mistakes that can otherwise get missed. My heart always plummets when someone spots a face in my landscape and then I can see it too. That's when I know that I have missed something I should have spotted at the *nōtan* stage. That said, there will always be someone who sees a face, animal or random surreal object in your print. Rest assured that most of the time it's just them, not your printmaking.

## PLANNING THE SIZE OF YOUR PRINT

Deciding what size to make the finished print is important and it is worth running through a few considerations before you start work on the design drawing.

### Working to a fixed size

If you are working to fit a particular frame or mount, or to print onto a fixed paper size such as a greetings card, the size of the print is already decided. You will need to plan and work accordingly.

The white margin allows this design to sit comfortably in its frame with room for a signature to mark the card as an original print.

Allow space for a margin around your design unless you specifically want the print to bleed off at the edge of the paper. Space for a margin does allow space for a signature and edition number, unless you want to sign across the print. People do prefer signed work, even if the print is a gift. Space for an edition number is also important if your prints are a limited edition. In addition, it usually works best visually if the printed area has some breathing space.

If your design includes a border, make a rough sketch and check how the proportions work with your frame or card. A layout that looks

good on a blank sheet of paper may not look as good fitted into a frame or printed onto the confines of a card or label. You will probably find you need a little more space to achieve pleasing proportions than you anticipate.

If your printing paper has a decorative deckled (rough) edge and you want to keep that deckle and make it a part of the finished print, your design drawing will have to work in balance with the dimensions of the paper. Do some checking and work out how much of the paper will be printable. The registration system you use for hand printing, or your printing press, is likely to take away from the print area and will affect the proportion of your design (*see* 'Printing papers').

### Working without a fixed size

Think about the time you have available to devote to the project in hand. It's very easy, at the design stage, to become very extravagant with a lovely big, complicated drawing. I am certainly guilty of this myself. Remember a reduction linocut requires that all the prints you want to make from your lino must be printed at every stage as you go. Don't forget to factor in the time spent cutting too.

If you are hand printing, give a thought to your strength and energy levels. Hand printing linocut as you will see elsewhere in the book, is perfectly practical and excellent results can be achieved, but it does take work and some strength. This is especially true of prints designed to have large areas of flat colour as opposed to those with more cutting detail. (This difference is discussed in the section on inking.)

The type of paper you plan to use will also have a bearing on the print. If you are hand printing and using a heavy weight of paper, there is more labour involved in taking an impression than if you are working with a lightweight paper. This can add significantly to the effort involved at the printing stage so always think about the size you intend to work and the paper you plan to use.

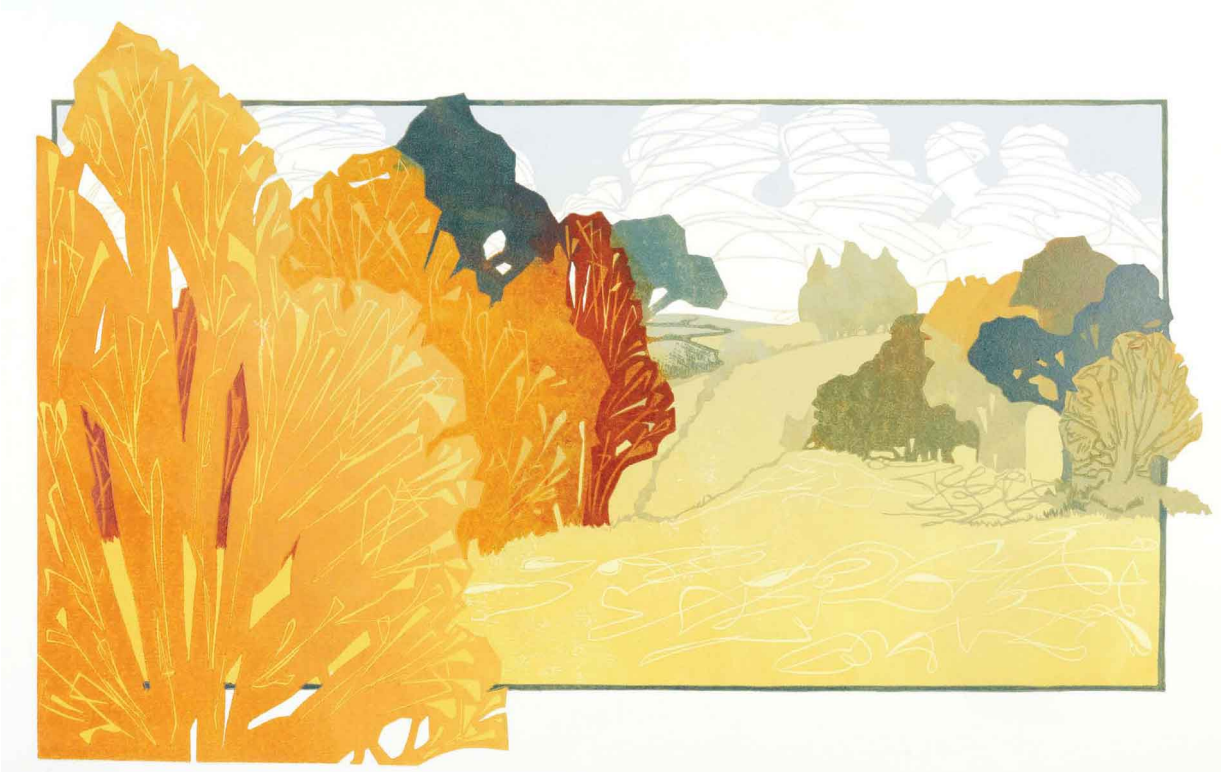
## FRAMES AND BORDERS

Would your design benefit from a frame or border cut and printed as part of the linocut? I define a frame as a surrounding line of some kind, and a border as something more complex and decorative. Adding any kind of surrounding edge to your design will have a big visual impact on the resulting print. It is worth understanding how frames and borders affect a linocut before you decide whether they are likely to enhance or restrict your design.

## A frame outlining the work

A frame consisting of a line or lines outlining the work gives a sense of containment and formality. It isolates the image and holds it within a space, often giving a kind of gravitas to the print. A frame may be the making of your print or annoyingly restrictive.

A simple frame works well for *The Sisters,* defining the space and giving the cosy feel of an old picture book illustration.



*Buckinghamshire Beeches* is an example of an inset frame working with the landscape rather than enclosing it.

Frames change the work enormously depending on their size in proportion to the print. Altering the width of the frame can make a big difference to its appearance. It is always worth trying several widths when adding a frame to a design drawing. Using a linear frame to outline the print is often successful when you are working in a more stylized, playful or formal way, or as a means to link prints together when working on a set or series. However, a frame can pin work down and will not suit all subjects. My landscapes would be hampered by banging up against a formal frame so I very rarely use frames in my work.

Frames need not be a single solid line or a dark colour. A frame might consist of cutting a line, inset into the design by a few millimetres, before printing. This would give a simple line of unprinted paper around the print, just in from the edges. A frame might also consist of double or even triple printed lines if something more dramatic suits the subject and design of the print. Empty space

can work well as a frame where the finished print is made up of multiple small images surrounded by unprinted space.

Partial frames or inset frames are worth considering. This approach is a more relaxed option if you want to avoid the more formal feel of a complete frame. If you go for this type of frame, it is important to get the balance right for the overall design. In these situations, the frame needs to interact with the rest of the print and enhance the overall design. It should become another part of the composition, rather than just an edging.

Frames where part of the design is overlapping or breaking through the frame can work well with graphic designs and for greetings cards. The resulting impression is lively and abundant. The sense of generosity it gives is always nice in a decorative print. Be careful with the balance between the design and the frame. Avoid being too timid; better to have your subject confidently bursting out of the frame than nervously dipping a toe over the edge.

## Decorative borders

Going a step further than a frame by adding a decorative border can work very successfully with linocut, playing well to its graphic strengths. Depending on your design, borders can consist of almost anything from a simple geometric repeating design, a step away from a frame, to a themed extravaganza larger than the design at its centre. Combining a decorative border with a linear frame works well. Outlining a border will give it more drama. The linear frame element will anchor the border and help to separate it from the design.

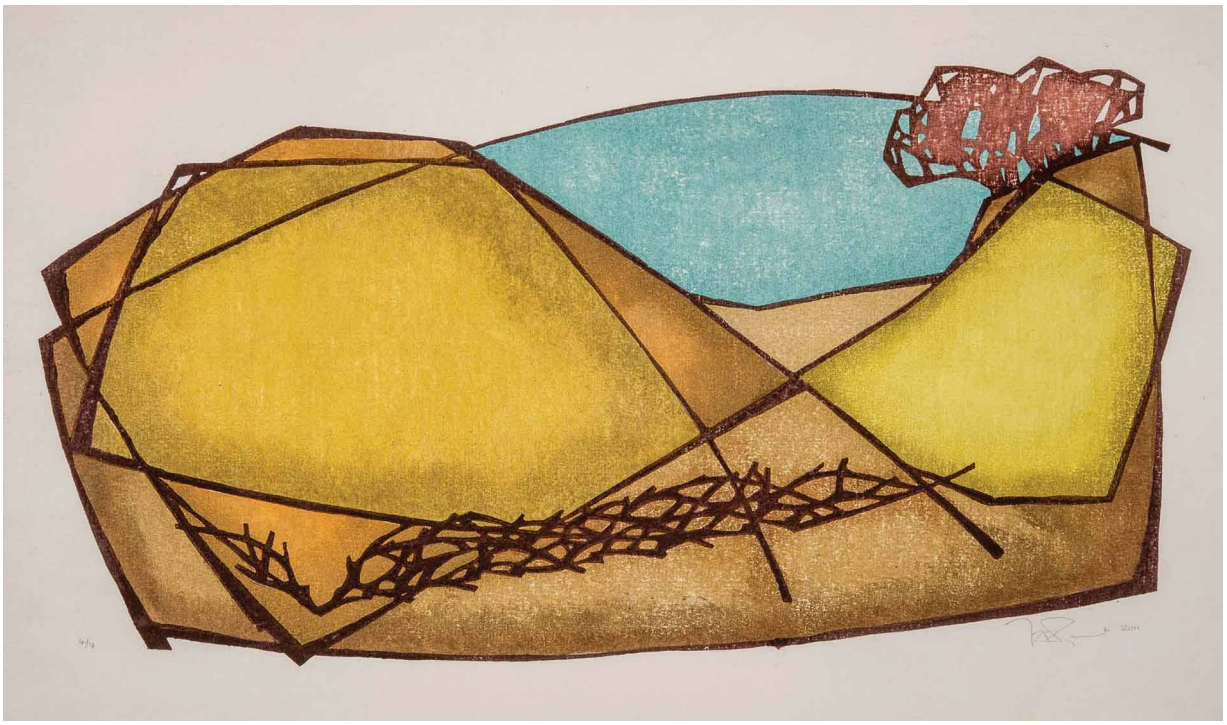
A decorative border with an inset frame works well in the right place, as here with this festive greeting card.

Borders can be designed into the print itself and be very understated. I have often used branches, rocks or hedges to edge my prints as a subtle border. This approach works well when you want to add strength to the design without the formality of an obvious border or frame.

As with all aspects of designing your print, watch out for overkill. Borders are so entertaining to design that they can become disconnected from serving the print and dominate. If you really fancy a huge decorative border, try playing a game of contrasts. A wildly baroque border surrounding simple, minimal contents often works extremely well, especially if the colours are contrasting.

## Integrating frames and borders

Convention says frames and borders edge a design, but they can also become a dynamic part of the image, working within it as well as edging the finished prints. This approach can be very appealing and playful if the frame or border is fluid and full of movement.



In this print *Penn Valley, Laid Hedge*, the frame is very much a part of the overall design.

Think about having a border down or along one side of the design, to split it or balance the space. Illuminated manuscripts and bordered textiles are excellent sources for ideas about borders and especially so if you want to integrate a partial or asymmetric border into work.

## UNPRINTED SPACE

Leaving part of your design as blank unprinted space is very much a matter of personal preference. It is something I have learnt to value through my studies in Japan, and white space can be a powerful visual tool if you get it right.

Blank space works well if you are using a special paper. By having areas of unprinted space, you can make the paper a part of the design and make the most of its quality. I like to do this with handmade papers that sometimes have a slightly irregular quality or are the natural colour of the paper's material. Blank space does present a challenge for the printmaker. Keeping the paper virgin clean throughout the printing process takes great care (*see* 'Inking'). Do factor in this extra effort and jeopardy when you are designing your print.

Blank space is also worth considering if you are using a paper with a deckle that you want to keep as part of the finished artwork. Experimenting with breaking up the edges of the print with white space and breaking away from the conventional rectangular or square print edge surrounded by a margin can be very effective, drawing attention to the paper and the deckle.

## INCORPORATING BRUSH MARKS INTO THE DESIGN

You may like to add brush marks into your overall design. You will find practical instructions on how to cut them in the section on cutting techniques. To incorporate brush marks into your design, begin with the thumbnails and play with a brush and your drawing. You may need to sketch larger thumbnails to accommodate brush marks, but keep the work quick and accept that you are looking for the area the brush mark will occupy and the feel of how the brush stroke will work rather than a specific brush stroke. Once you can see what works, move onto your design drawing (*see* 'Developing ideas into a design drawing', below) and allow space for your brush marks.

*Birch and Winter Sky* – linocut onto deckled paper. The unprinted space showcases the delicate Japanese paper and wide empty space of the landscape.

This print *Granite* owes its drama to dynamic brush marks. The marks were painted directly onto the lino and acted as a cutting guide only. The lino was printed as normal using a roller.

## Brush marks directly onto the lino

I find brush marks are best painted directly onto the lino rather than trying to include them in the finished design drawing. To try this method, first allow space for the brush mark in your design. Sketching a basic shape on the drawing can help to give a rough guide to position the final brush mark on the lino if needed. Transfer the design drawing to the lino and paint your brush mark directly onto the lino when you are ready to work with it. Brush marks made in paint are not as stable as the carbon marks on lino and are best made when needed, rather than added at the beginning of the process to cut at a later stage in the print.

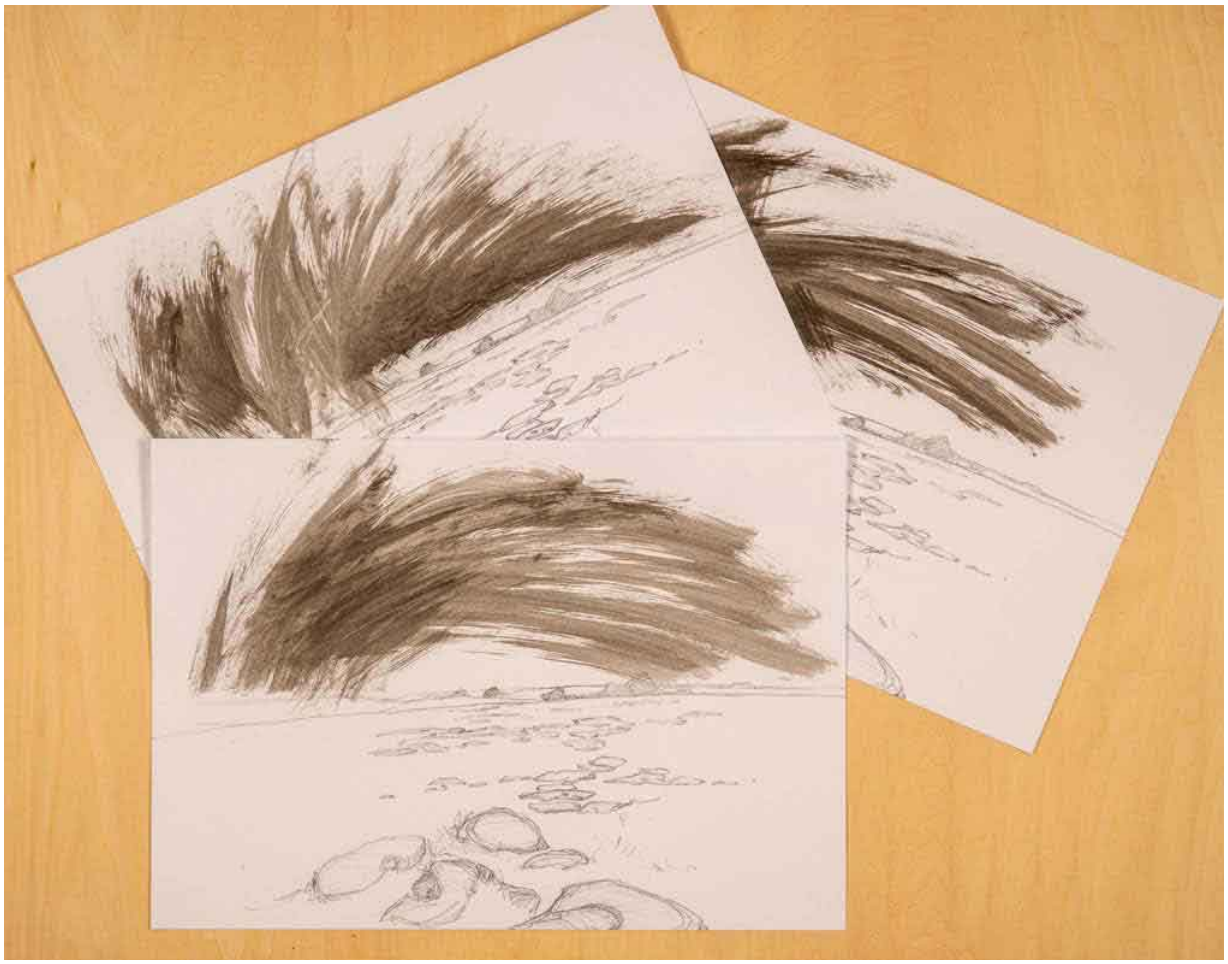
I usually use a white poster paint for brush marks direct to lino. This allows as many trial runs as needed and the marks can be easily wiped away without mess or staining until you achieve the mark you want. Make a final check in a mirror. Your brush mark will

be reversed in the final print, so use the mirror to check you are happy with it before you cut. It may take some practice to make brush marks that flow successfully as a mirror image.

## Brush marks onto the design drawing

If you want to paint your brush marks onto the design drawing, it is possible. In this method, the brush mark is made on paper, then traced and transferred to the lino using carbon paper with the rest of the design drawing.

In this print *Limestone Edges*, the sky was left blank in the design drawing and cloud shapes were painted directly onto the lino to use as a cutting guide once the design drawing had been transferred from paper to lino.



If practical, making several copies of your design drawing allows for practice with your brush.

Working in this way does have the advantage that you are making your brush mark in the correct direction for the finished image, but it does influence the brush mark. The trace and transfer process takes away some of the spontaneity and detail of the mark. The end result is a slightly more graphic and stylized brush mark which is easier to cut, but loses some of the fluent delicacy of cutting around brush marks made directly onto lino.

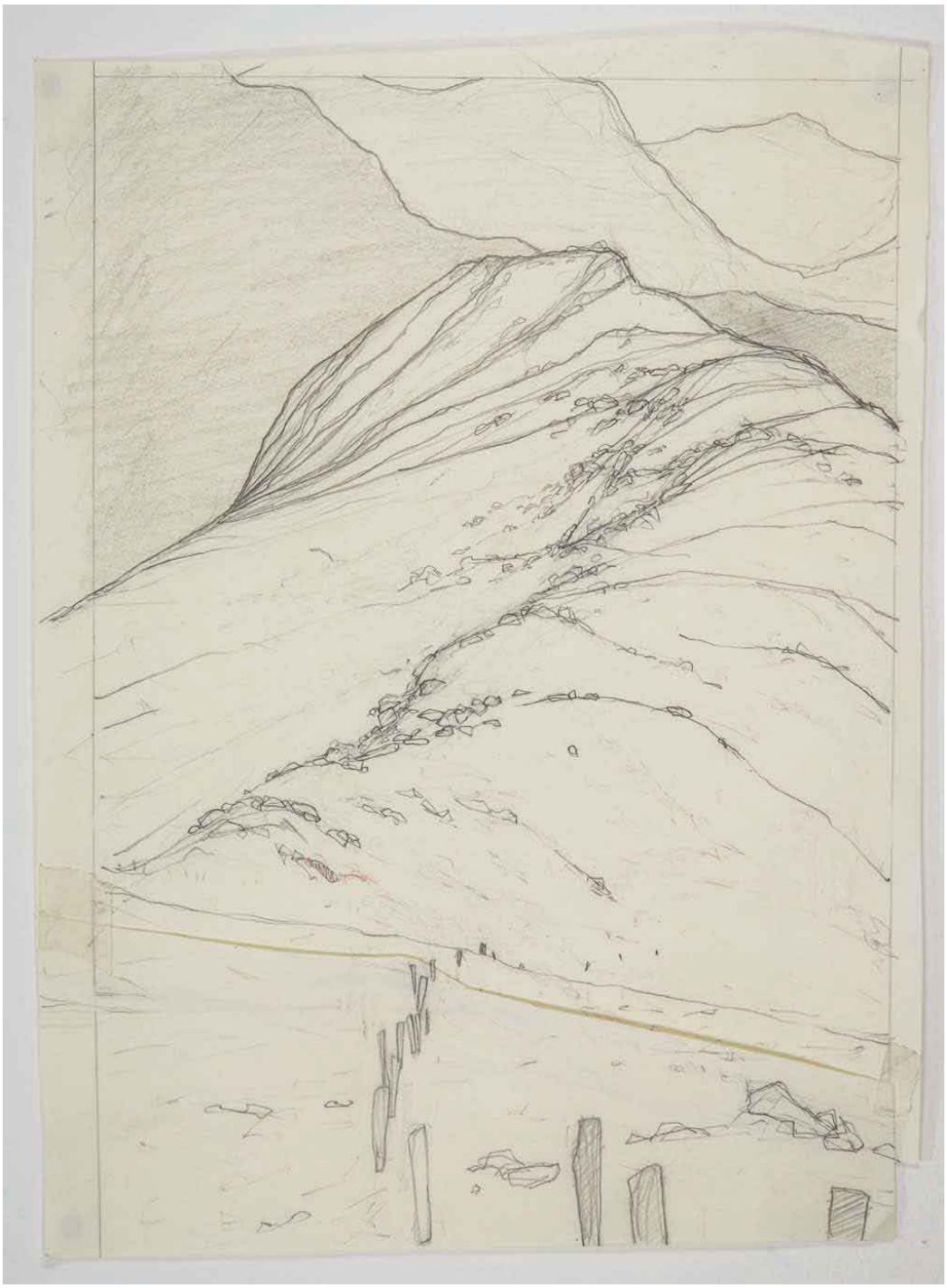
Painting directly onto the design drawing is best done with a dryish brush and scanty paint to avoid cockling your paper and making tracing difficult. You may like to scan and print out several copies of your design drawing to allow for practice. Once you have the desired brush mark in place on the design drawing, trace around

the brush mark along with the drawing as part of the process of transferring your design to the block.

## DEVELOPING IDEAS INTO A DESIGN DRAWING

Once you have arrived at a strong idea for your print, the next step is to work the idea up into a drawing for transfer to the lino. A drawing suited to linocut is different from making a drawing for its own sake. Your design drawing is a tool to help you to cut and print. It plays an important part in the finished work, but is not an artwork in itself. Think of drawing for linocut rather like making an architect's blueprint: everything in its place with clear outlines.

I like to work with a variety of resources to develop a design drawing for a new print.



A finished design drawing ready to trace. I often tack on or cut off paper as my ideas change and I need to change the size of the drawing.

The following advice is aimed at providing a design drawing that will act as a strong skeleton for the print. The design drawing is by no means set in stone and you are likely to make changes, add

detail and tweak it here and there as you work. But it is helpful to have a clear design drawing to transfer to the block, at least for your first few prints. It means you can start work with a clear guide and the big decisions made up front. If you are new to linocut it makes sense to stick fairly close to your design drawing. You are likely to be more comfortable with developing ideas at the drawing stage rather than improvising while cutting and printing. As you become more familiar with the print process and begin to explore its possibilities, you will loosen up and be able to improvise more, using the design drawing as a starting point rather than a fixed route to the finished print if you choose.

## DRAWING, OR PAINTING, DIRECTLY ONTO LINO AND SKIPPING A PAPER DRAWING

Missing out the step of designing on paper and going direct to lino is perfectly acceptable and many very accomplished lino artists use this method. My preferred method is a compromise. I make a paper design drawing, reverse it by tracing and transfer it to lino. Then I use it as a general guide, adding spontaneous elements as I go. Traditional lino is very accommodating for planning, sketching and correcting in pencil or pen (*see* section on materials for drawing on lino). You will have plenty of scope for editing your drawing.

There was no design drawing for this abstract landscape, just a painting made directly onto the lino with a combination of white poster paint and Indian ink. The linocut was printed in oil based inks with the painting acting as a cutting guide.

If you want to miss the design drawing on paper and the transfer stage, going direct to lino instead, here are some things to think about.

How much drawing you do before cutting is up to you and your confidence, but if you want to be sure of a balanced design, it makes sense to at least sketch out the bones of the print. This is especially true if you want a border. Borders are so easily forgotten and the lino cut away too early by mistake.

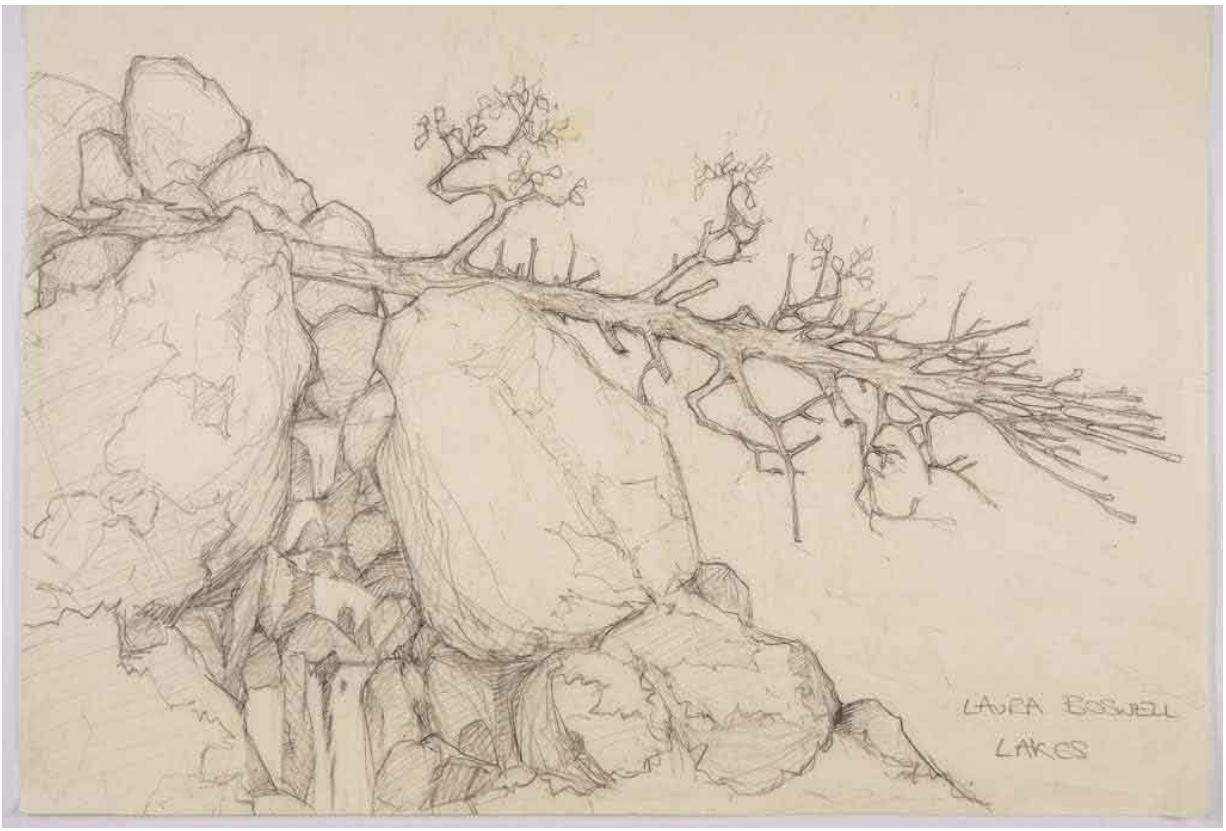
If you want your drawing to stay in place through cutting, printing and cleaning, you will need to draw with something able to stand up

to these demands. Make sure whatever you use has no or very little transfer to the finished print.

Whatever you draw will appear in mirror image on your print. This may not be a problem with your design, though drawings in their original orientation do tend to have a better flow. It will be an issue with any text unless you remember to write backwards. My students sometimes go straight to lino for simple projects in my Christmas classes and I almost always have to remind them that Merry Christmas doesn't look quite as festive spelt in reverse. Use a mirror as you go to check that your design works well in reverse. That is how it will appear in your finished print.

## DRAWING SPECIFICALLY FOR LINO

Take the time to make a clear and complete design drawing, especially when learning. It is the easiest way to plan and prepare for a successful print. A design drawing allows you to take an overview of the composition and balance of the print at the drawing stage, where major alterations are easy. If you rush in with a rough sketch and wing it, you may be lucky and make a wonderful print, but accept that you will need to make major decisions as you work. Visualizing how your end print will look with a half cut block as your only guide can be surprisingly tricky and takes practice.




Taking the time to decide where the elements of your design begin and end at the drawing stage will save a lot of time when you come to cut. Here I have drawn the tree and completed all the branch details. I may change it slightly as I go, but a lot of the cutting decisions have been made at the drawing stage.

Keep the drawing clean with clear outlines. Sketchy drawings that vanish into nothing often look lovely on paper, but are a problem in a design drawing for linocut. Lino is a binary system: uncut lino will print and cut lino will not print, and you must decide when and where to cut. A sketch where everything trails off into nothing will mean you are constantly having to make cutting decisions as you work. A clear drawing with each part of the subject fully outlined will save the constant need to work out what is to be done. In addition, the sketchier and more rambling a design drawing, the harder it becomes to follow as you start removing lino and the print progresses. Remember you can always edit your drawing during cutting.

The design drawing is for guidance. You can add more interesting lines and other mark making as you work on your lino.

How you cut can be decided as you work. The design drawing's job is to show you the basis of where to cut and give an overall guide to the finished print.

Get frames and borders decided and drawn at the design stage rather than adding them later. It is easy to forget to leave enough lino for a frame if it is not clearly marked from the start. It is infuriating to come to add the frame, only to find you have ruined your plans by cutting away a crucial area of lino.

A clear design drawing will help you to understand how to section up your drawing into its various layers of colour. Use the original drawing on paper, or the tracing (*see* transferring the design to lino) as a reference to use as you go, or for planning your colour layers in advance (*see* colour layers).

## Negative space

Negative space, or the space around and between objects can play a very important and helpful role in drawing for linocut. In the kind of design drawing I suggest, the requirement is for clean strong outlines. Areas of negative space become much more apparent as a result and are a useful aid to designing your linocut.

There is no left hand boundary to *Snowcloud.* The minimal details of the far mountain work with the large area of negative space, emphasizing the sheer scale of this winter landscape.

*Between Cliffs, St Abbs Head* – negative space is used as a bold balance for the complexity of these Scottish cliffs, drawing attention to the narrow gully.

Perhaps my time spent in Japan has made me particularly aware of negative space. The Japanese have a term '*Ma*' to describe the space between objects and the value it plays in both art and life. I find this concept very attractive and easy to relate to in my work. I am often more interested in the space around and between objects, than in the detail of the subject matter when it comes to my prints. Philosophy aside, negative space is a helpful tool for changing your sketches into a design drawing for print.

Negative space is a powerful aid to composition. It takes your focus away from the subject matter and distracting detail. By drawing only in outline and concentrating on negative space, it is easier to see the flow and the balance of the design before the detail goes in.

Negative space can also be a real help if you struggle with simplifying your drawing. Try beginning by sketching out your subject matter in terms of the spaces in between and around shapes, ignoring the subject matter itself. Once you have the negative space in place, you can then begin to add in detail. Working from basic outline towards detail, it is much easier to call a halt while things are still simple if you prefer them that way. In my work I rarely develop my design drawing much beyond the basic outline stage, preferring to add detail – if needed at all – as I go.

I often use negative space as a means of tapping into linocut's graphic visual language. Try looking at an object and see how the negative space around it works. Playing with the shapes and angles created by the negative space, perhaps exaggerating, or making them more fluid or angular, can be a helpful exercise in stepping away from the realism of painting or drawing.

## A reality check

It is a good idea, when working up a design drawing, to stop and have a reality check from time to time. It is very easy to draw away on paper getting ever more intricate, forgetting the task ahead in the pleasure of drawing. Remember that you will need to follow drawing with cutting, and that your cutting will need to relate to your drawing for the print to live up to your design. It is absolutely possible to cut stunningly intricate and detailed linocuts, but it takes time and

practice. I am all for pushing boundaries, but don't set the bar so high at first that disappointment is inevitable.

A drawing on paper is very different from a linocut and what works for one, won't necessarily work for the other. Check from time to time that you are creating a functional design drawing as described above and haven't crossed over into thinking of the drawing as the finished result. Remember that the design drawing is only one step in the creative process. The intention is not to recreate your drawing in linocut form, it is to make a drawing that will play a useful part in making a linocut print.

Keep your drawing simple at the design stage; you can draw additional detail onto the lino as you go. Imagine a linocut print of a house as an example. It is a good idea to have the building's shape and the position of the windows and doors in your design drawing, but there's no real need to add every brick or roof tile at the drawing stage. You can draw bricks and tiles later directly to the lino and you may well find a way of cutting these details that works better than relying on your design drawing as a cutting guide.

## DESIGN TIPS

There are certain design choices you can make at the drawing stage that will make life a little easier when it comes to cutting and printing your linocut. I have listed a few tips to get you started. As you become familiar with linocut, you'll quickly learn to design with the process in mind and the easier it will be to navigate the options to suit your individual needs. As always, it is important to have a balance. Sometimes, the easier working option simply won't give you as good a result as going the extra mile. Sometimes, taking a complex and tricky route might result in a print where a simpler option would have worked as well or better. Planning well at the design stage is a constant learning curve and one that shifts as your skills and experience build.

Large blank areas are the most challenging to print, especially if you are hand printing. If this bothers you, cutting in a subtle texture or using another layer of colour to add a texture can take the pressure off having to print a perfect flat sheet of colour. In *Outcrop* the texture cut in the water is an important part of the design, but also makes printing considerably easier.

Manipulating your printing can be very effective. A printing effect such as a colour bleed, wiping or multiple colour inking may be an alternative to cutting and will work well. Remember that inking effects do mean a slight variation in your edition. In *Rain and Light, West Coast* both the rain in the sky and the cliff to the far right are ‘painted’ using the side of the roller rather than cutting.

It is easier to cut fine detail into lino where the background is printed and the fine detail remains unprinted, than it is to cut away the background isolating the fine details to ink up and print. This little block is to remind my students of the difference.

Outlining areas in a darker or paler colour will isolate them. With this technique it is possible to suggest several different forms using one flat layer of colour and outlines in another colour. In this print *Empty Harbour*, the stones of the harbour wall are isolated in this way.

A line that crosses part of the design from one colour to another can change colour and the viewer will still see it as a single line. A black line on a white background can switch to a white line on a black background without confusion. This is equally true of small details: white birds against a black sky can change into black birds against white clouds without breaking the flow of the print.

Simplifying a complex form with many crossing areas down to a silhouette, to negative and positive space, can be very effective as here with the reeds in *Autumn Crops, Spalding***.** Trying to describe exactly how each part of the form crosses the other would look fiddly and detract from the overall effect.

## FINAL CHECK

Before I go on to the next phase of transferring the design drawing to the lino for cutting, I like to make a final check to see that I am happy with the shapes in the drawing. There are a few time-honoured ways of checking the drawing.

Pin the drawing to a wall and stand away from it. This helps with seeing the balance of the design as a whole and can reveal any fundamental weakness in the composition. I also do this while I am printing, just to get a better sense of how to progress. With

printmaking, it is all too easy to be almost nose-to-work for long periods and to lose a sense of the image as a whole. It’s also a trick I use when teaching. If you are new to linocut, the middle stages of a reduction print can sometimes seem a little confusing. Taking a good step back often brings a smile of relief to a student’s face as the route they need to take next is revealed.

Hold the drawing up to a mirror. This is an old trick to give you some separation from the work. I find it very helpful for checking shapes and their negative space in relation to each other. I sometimes find, when looked at in reverse, shapes or lines I thought worked well suddenly lose their fluency and look weak or clumsy, or they aren’t quite working in combination. I edit the drawing and then check that it is a successful alteration in the correct orientation. You might like to keep the mirror to check your linocut as you work since your drawing is reversed on the lino. Looking in the mirror will show you the piece of lino with a drawing in its final orientation.

Look at the drawing upside down. This makes it harder for your brain to interpret the drawing immediately and rush to make assumptions of its own, leaving you free to take a fresh look at your work. I find this reasonably useful for checking overall balance and for gaining some mental distance, but somewhat headache-inducing.

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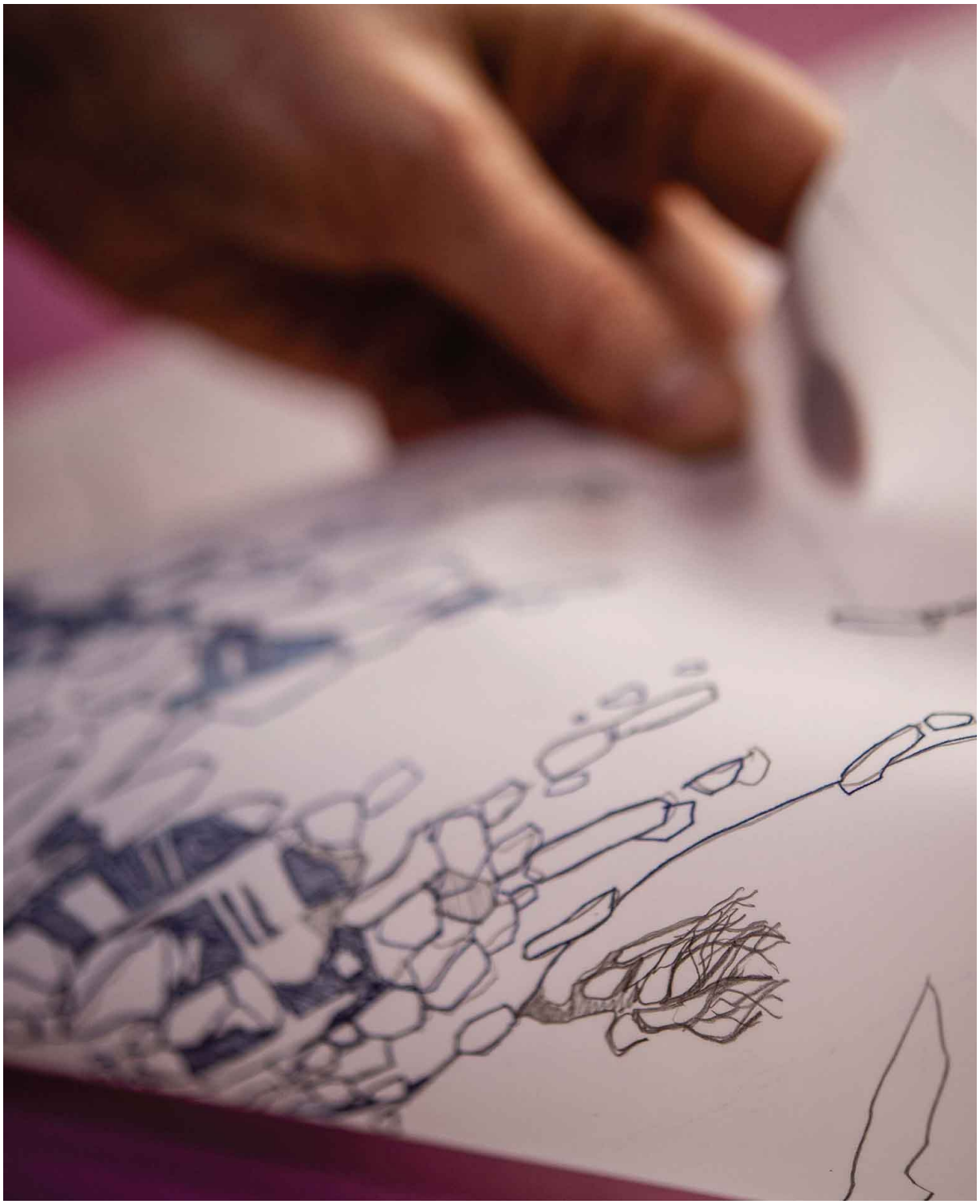
CHAPTER 8

# Moving from Paper to Lino

This section on transferring your design onto lino is written with reduction printing in mind. It assumes that the design drawing will be transferred to a single piece of lino and you will want it to remain there while the lino is cut away in stages as it is printed. There are many ways of transferring a design onto lino. I suggest carbon paper because I find it is a simple process to transfer the drawing to the lino in this way and gives a good result. This method works equally well for transferring a design drawing to a multi block or single colour linocut.



Positioning a tracing ready to transfer the drawing onto my stained lino.

I use a combination of tracing paper and carbon paper to transfer my design drawing to lino and this is the method detailed here.

The tracing and carbon transfer method I am describing enables you to make a clear transfer of your design drawing, accurately reversed, onto the lino. Once transferred, the drawing remains as a permanent guide throughout the cutting, printing and cleaning process. It doesn't mean that you have to stick religiously to the original design drawing of course, but it will be there throughout the process should you need it.

## MAKING A TRACING

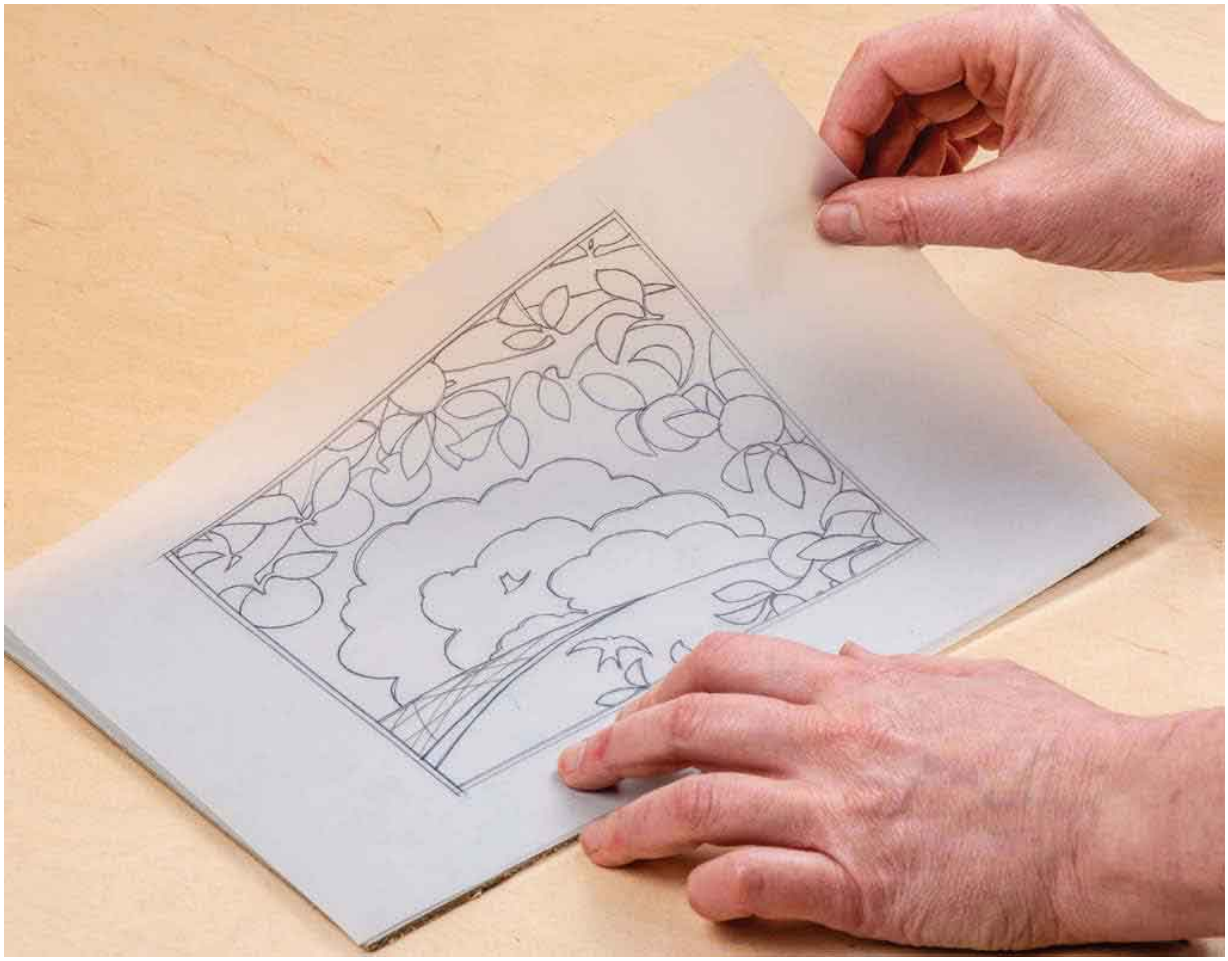
The first step in transferring your design drawing from paper to lino is to make a tracing. There are several benefits to making a good tracing of the work. Taking the tracing is another stage that allows you to make alterations before you transfer the drawing to the lino. I often finalize my design drawing at the tracing stage by changing minor details.

Once completed, the tracing allows you to reverse your drawing with complete accuracy so that the final print will have the same orientation as your original drawing. When cutting, the tracing gives you a visual reference that you can flip in either orientation to use as a guide while working. Finally, if your drawing does fade and needs replacing, it is easily restored using the tracing.

## TYPES OF TRACING PAPER

There are many kinds of tracing paper at assorted price points. Tracing paper is made of a variety of materials and is available in pads, sheets and by the roll.

A variety of tracing papers: on the left and in the roll are plastic tracing films, on the right sheets of paper tracing paper. Note the completely smooth surface of the plastic film in contrast to the paper.



Keeping the master tracing clean and neat helps with transfer and for using the tracing as reference later.

Tracing papers made from paper are the cheapest type and are perfectly good for trace and transfer work with lino. However, paper-based tracing paper is very susceptible to water damage. If you spill any liquid on the tracing paper while working, you will ruin the tracing. Carelessness aside, paper-based tracing paper is also affected by humidity in the atmosphere and can distort over time. This isn't a problem if you make your tracing and use it straight away to transfer your drawing to lino, only referring to it as a visual guide after one-time use. If you expect to use the tracing for adding more detail later on, or for freshening up your carbon lines as you work, you may find the tracing no longer lines up accurately with the block. I store pads or rolls of paper-based tracing papers in plastic bags or boxes to avoid the paper becoming wrinkled by humidity over time.

Plastic based tracing films are expensive, but are completely stable. They look and behave like ordinary tracing paper. If you work in a multi block technique or expect to use your tracing to re-apply or add to your linocut throughout the printing process, they are worth the expense. Tracing films come in several weights and types including washable types designed for textiles; a film of 0.50 microns, like Polydraw of 0.050mm, works well.

## Taking a tracing

A tracing from the design drawing can be a straightforward direct copy, or you may like to make alterations to the design drawing as you go, using the tracing stage as a further opportunity to refine your work. You may want to exclude unnecessary details from your design drawing or add them in at this stage. Whatever your approach, remember that following the transferred design is optional and I have often redrawn large areas of my prints over the top of my initial carbon transfer. Never feel railroaded by your transfer drawing if inspiration strikes and you can think of a way of improving your design.

It is well worth taking the time to make a clean tracing. Sometimes I make an initial tracing and find I have edited and fiddled with the drawing to such an extent that I end up making a second tracing to have a ‘clean’ copy for transfer. A clean tracing will keep your carbon paper transfer clean in turn and make working with the lino easier when it comes to cutting. It is worth getting comfortable, securing the tracing securely to the paper and using sharp hard pencils and a good ruler where necessary. I use a 2H for the initial tracing, which is hard enough for a clean line, but still gives a clear pencil line through the tracing when it is reversed. I then use a 4H pencil to make the transfer to lino. This harder pencil puts more pressure onto the carbon paper and gives good carbon lines on the lino.

Tracing paper, both the paper-based and plastic-based types, will blunt pencils very quickly so remember to sharpen your pencil regularly, or use a propelling pencil if you prefer. Investing in a decent pencil sharpener is a good idea for any artist. As a teacher with many pencils to sharpen, I use an electric pencil sharpener that

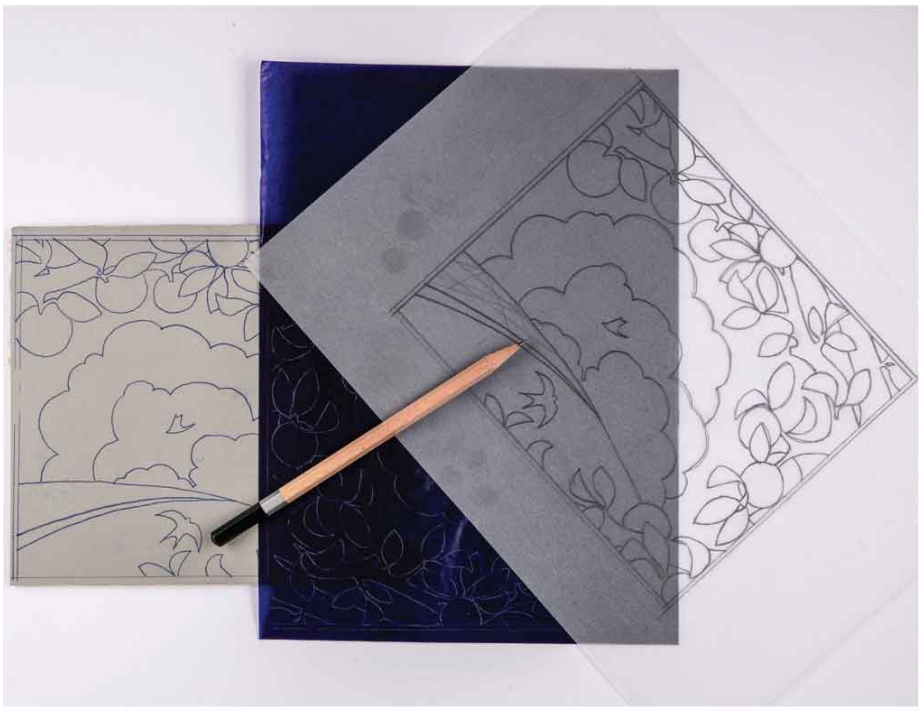
accommodates various sized pencils. It was expensive but gives immediate and excellent results.

While I always work in pencil, you may prefer to take your tracing with a fine pen or biro. If you use a felt pen to take your tracing, check it won't smudge on the tracing or cockle it with moisture. To transfer your design to the lino, you will need to put pressure on the carbon paper and that will require a hard pencil or biro. If you use a soft pen to make the tracing, you will need to use a hard pen with the same nib size to impress the carbon paper if you want the transferred design to match your tracing. Remember that you can add lines and marks of different kinds directly onto the lino as you go, with the carbon lines just acting as a guide (*see* 'Drawing materials for lino').

## Reversing the tracing

This step is essential if you want your print to match your design drawing rather than be a mirror image of it.

To reverse your design drawing, all you need to do is to flip your finished tracing over so that your drawing is face down and you are looking at the back of your tracing paper when you come to transfer your design. When you lie your tracing down onto the carbon paper to transfer your drawing onto the lino, double check that the drawn side is face down to the carbon and you are looking at the back of your tracing paper. If you are new to printmaking, the concept of reversing the tracing can be understandably confusing. Even if you are familiar with the concept, it is still very easy to forget to reverse the tracing and end up with an unwanted mirror image print. Making a note on the tracing may help.

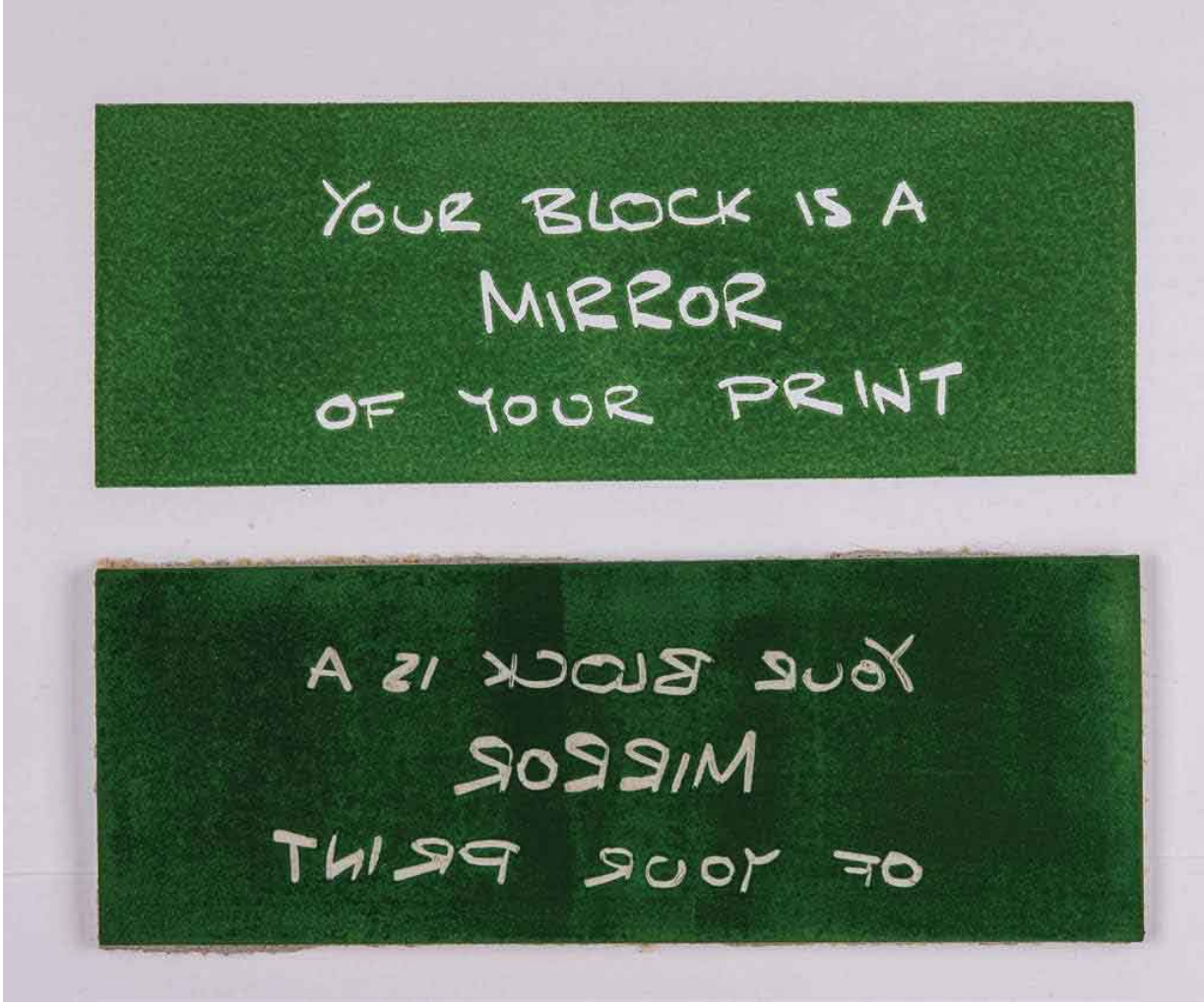


Remember to flip the tracing face down before transfer onto the block for a print that matches your design drawing. If you forget, the print will be a mirror image. Note how much additional detail has been added to the design during the cutting and printing stages rather than in the design drawing.

# TRANSFERRING THE TRACING ONTO LINO WITH CARBON PAPER

## Types of carbon paper

Like tracing paper, carbon paper comes in various types, sizes and costs. I use a mid-priced carbon paper for craft work that comes in blue. It is described as being for transfer onto wood and fabric, but I find it also works extremely well with lino. It happens to be double sided, but there is no need to have double sided carbon paper for working with lino. I just stick with this brand because I know it works.




A simple prompt I cut and printed to remind students to reverse their design drawings before transferring them to lino.

There is red carbon paper available and the kind I buy comes with two additional red sheets in the pack. Having a couple of different colours of carbon paper can be very useful. If you go wrong, or want to alter a carbon drawing and you can't remove it from the lino, having a contrasting colour for the revised drawing will make it stand out clearly.

## Testing your carbon paper

If you buy your carbon paper from an art supplier, they may well be able to confirm it is suitable for use with lino. Even so, it is sensible to run some tests, or trial new carbon paper with something unimportant before you rely on it for a serious print. A good carbon paper will transfer your design to the lino with strong clear lines, will stay visible on the lino throughout the printmaking process and will give no, or minimal, transfer marks onto printed paper when properly prepared (*see* 'Avoiding unwanted transfer of carbon onto the finished print', below).

A good carbon paper will give a clear line that remains on the block as you work. On the left, carbon transfer on a stained block ready for cutting. The same block part way through the cutting process on the right. The stain is fading with the cleaning, but the carbon remains clear.

## Keeping your transfer neat and accurate

In an ideal world, the only carbon transfer you will get onto your lino are the clean lines you intended to copy from your design drawing. However, a carbon paper that is bold enough to ensure a good clean

line drawing and stay stable throughout the process is also likely to be sensitive enough to transfer other marks too. The more carbon that ends up on the lino while you transfer the drawing, the trickier it is to see your working lines and the higher the risk of transferring unwanted carbon marks onto the finished print.

The overly detailed messy carbon transfer on the left is far more likely to cause problems with marks on the print than the clear transfer drawing on the right.

Best practice is to work as carefully and as cleanly as possible while transferring your drawing. Remove bracelets and rings for this step if you can. Hold the carbon paper and tracing in place with tape at the edges, rather than holding it down with your hand. Avoid leaning on the carbon with hands or elbows and don't rest spare pencils or your ruler on it while you work. Transfer as much of your design drawing as you need but avoid any unnecessary drawing where possible. Adding extra details or shading in is best done

directly onto the lino as you work, rather than including it in the transfer process from drawing to block.

Position your tracing, drawing side face down onto the lino and line it up into the correct position. I find it easiest to use a couple of strips of masking tape on one side of the tracing to hold it in place and to make a hinge. This allows you to slide the carbon paper carefully between your drawing and the lino. Then add extra tape at the edges of the tracing if needed to keep everything secure.

If you are using single sided carbon paper, ensure that you have the correct side facing the lino. This is usually the darker and shinier side of the carbon paper, but check it if you are in any doubt. Using a sharp hard pencil or ball point pen, go over your traced lines. Press firmly to transfer the design drawing onto the block. A confident writing pressure is fine, you shouldn't need to use force.

## Avoiding unwanted transfer of carbon onto the finished print

(*See* also 'Drawing materials for lino' and 'Staining', Chapter One.) In an ideal world, your initial drawing in carbon should never end up making marks on your finished print. The likelihood of carbon transferring and spoiling work can be avoided by following the guidelines below, but they are not an absolute guarantee of success for every make of carbon paper, type of ink and paper combination. I strongly advise running tests yourself to find a carbon paper you like and that works in a predictable way with the inks and paper you prefer.

There are two exceptions to this rule. The first is if you cut away all carbon marks before you print your first layer. The second is if your first ink colour is darker than the colour of your carbon marks. If either of those are the case, any carbon marks will be hidden and there's no need for concern.

The steps below vary slightly depending on the kind of ink you use and whether you mind using white spirit (mineral spirits) or not.

### Working with oil based inks and safe wash oil based inks

Transfer your design drawing using the carbon paper as described onto lino that has already been sanded. If you want to pre-stain your

lino (*see* ‘Lino’) for ease of cutting, this should also be done before the design drawing is transferred.

With proper precautions, there should be no transfer of the carbon and the coloured stain to the finished print. Here the lino is printed with oil based ink.

Leave the carbon paper drawing to set on the lino. This stage is important. If you go directly onto the next step, you may well wash the carbon drawing straight off again. Leave for at least a couple of hours, ideally overnight. How long will depend on the brand of carbon paper, some set faster than others.

After the carbon has set, wash with white spirit to remove any excess carbon. Test with a small corner before washing the whole block. If the carbon lifts, leave it to set for longer or try a different carbon paper. If you do not want to use white spirit, follow the advice in ‘Avoiding solvents’ below.

The block is now ready for cutting and printing. Unless you are completely confident with the carbon, always print a test print onto cheap paper before you start printing properly to check there is no transfer.

If transfer happens, wipe the block with white spirit and try again. If the transfer persists, print some trash prints onto cheap proof paper until the carbon transfer disappears. This scenario has never happened to me when using oil based inks, but could conceivably happen with some makes of carbon paper.

**Water based inks**

Water based ink is far more likely to cause carbon transfer than oil based ink, but it is a short lived problem and easily resolved. If you are happy to use white spirit, follow the steps above until the block is ready for printing. Using a cheap paper, take a trash print to check if there is any transfer. If there is, take a series of trash prints on cheap paper until any carbon has disappeared. Once this happens, the block is ready to print onto your printing paper.

Carbon transfer is usually a short-lived problem. In this example these prints were taken directly one after the other from lino marked up with carbon lines. The carbon transfer shows clearly on the first impression, but is gone by the third. The block was wiped clean between each impression.

## Avoiding solvents

Follow the initial instructions above and leave the lino until the carbon has had time to set. Instead of washing any excess carbon away with white spirit, use detergent or soap and a damp cloth to wipe the lino thoroughly. Never immerse the lino in water or get it soaked.

Print onto trash paper as before. You are more likely to see some initial carbon transfer with soap and water. Make a few test prints and the carbon transfer will disappear.

However careful you are, it is always a good idea to give your first good print a thorough check over before you continue to print the edition. Look for any carbon transfer (as well as any cutting issues and for colour checks as mentioned elsewhere in the book) and go back to trash printing if any transfer is visible.

### Carbon marks fading

Depending on your carbon paper and how many layers you print, your carbon lines may begin to fade or disappear in the later stages of printing. Provided you use a good carbon paper and have allowed it to set on the lino properly, this should only start to happen once you go beyond six or so layers.

If your carbon fades within three or four layers of printing, either the carbon wasn't left to set on the lino for long enough, or the carbon is too weak and you need a better carbon paper. If the carbon is strong and it is only fading because you are working through many layers of printing, just reposition the original tracing and carbon and reapply the drawing. If you need to do this regularly with your prints, it is sensible to use plastic tracing film for accuracy (*see* 'Types of tracing paper' this chapter).

By the time the carbon fades and you refresh it with a new layer, you will probably be using dark enough colours for carbon transfer not to be an issue. If there's still a danger of carbon transfer being visible on the finished print, you will need to go through the steps for avoiding it as before.

## TOOLS FOR DRAWING AND MARKING THE LINO DIRECTLY

While the transfer of your design drawing to the lino using the carbon paper method will give you an accurate line drawing, there's no need to stop there. Traditional artist lino is an easy going surface for drawing and painting on with many different pens, brushes and pencils, and you can add to or alter your plans at will.

There are two practical things to consider when choosing your drawing tools. First is the likelihood of your marks transferring from the lino to the finished print. Second is the durability of the drawing if you need it to remain on the lino while you work through more than one layer. Both these factors are likely to vary depending on the kind of printing ink you use and your method for cleaning the block between layers of ink.

If you want to draw directly onto the lino for guidance only and are not using your drawn marks to cut around, your choice can be a practical one based on durability and transfer. If you intend to make marks on lino with a pencil, pen or brush and use your drawn marks as a cutting guide, the choice of drawing tool is key and your choice is no longer just a functional one. Your drawn mark making will play a crucial part in the resulting print. In this case you may have a trade-off between your drawing implement's creative benefits and having to take extra steps to clean between each printing to avoid any transfer. Or you may need to accept that your drawn marks can only be made a layer at a time.

Here are some suggested pencils, pens and brushes that I use along with a guide to their performance. As always, test first. Check out any new drawing materials with your inks and papers before you commit to making a serious print. Be especially careful to check felt tip or spirit based markers, such as Sharpies. Pens like this are durable, but can transfer badly in combination with some printing inks. I prefer not to use them.

| TOOL | COLOURS AND USES | EASE OF ERASING | TRANSFER OF UNWANTED MARKS TO PRINTING PAPER AND DURABILITY DURING LAYERED PRINTING | | |
|---|---|---|---|---|---|
| | | | WB | SW | OB |
| Graphite pencil | Grey. Best only used for single layers | Easily with a pencil eraser or white spirit | Possible, more so if pencil is soft. Fades quickly | Possible, more so if pencil is soft. Fades quickly | Possible, more so if pencil is soft. Removed by cleaning |
| White Chinagraph (Stabilo brand) | White (helpful aid for beginners visualizing where to cut) | Easily with a damp cloth | Erased by printing ink. Unlikely to show transfer | No transfer. Erased by cleaning | No transfer. Loses detail quickly, less so if it has a few hours to set |
| Coloured Chinagraph (Stabilo brand) These can be left to 'set' like carbon | Red, yellow, green, blue (vary slightly in staining and durability) | With a damp cloth, but can get messy and stain. Depends if they are set | **Bad transfer, do not use** | No transfer. Likely to be removed by cleaning. Depends on set | No transfer. More durable than white, but loses detail over time. Depends on colour and if it has had a few hours to set |
| Dip pen and Indian ink | Black ink (creative and expressive line) | With difficulty with damp cloth if applied quickly, but a messy process | **Bad transfer, do not use** | **Messy at cleaning stage. Do not use** | No transfer and extremely durable |
| White water based paint (watercolour, gouache, poster paint) and brush | Opaque white (fluid and spontaneous) | Easily with a damp cloth | **Take care!** Removed by printing, may affect ink colour | No transfer. Likely to be removed by cleaning | No transfer and may endure a few layers |
| Coloured water based paint (watercolour, gouache and poster paint) | Assorted | Variable with a damp cloth, may stain | **Take care!** Removed by printing, likely to affect ink colour | No transfer. Likely to be removed by cleaning | No transfer and may endure a few layers |

**KEY** WB: water based ink cleaned with water SW: safe wash oil based ink cleaned with water/ water and soap OB: oil based ink cleaned with solvents

## DIVIDING YOUR DESIGN INTO COLOUR LAYERS FOR REDUCTION PRINTING

Once you have a drawn design safely transferred to the lino, it is time to work out where to go in terms of layers and colours. This is the part that beginners often find the most intimidating. In this section there is general help and advice about developing your print. I use the word 'developing' rather than 'planning' intentionally. A printing plan is one option, but there is a range of approaches when moving from design drawing on uncut lino to finished print.

Whatever approach you choose, from full scale paper plan to direct leap into cutting, remember that nothing need be set in stone. It is important to be flexible enough to take advantage of new ideas and improvements that occur to you as you work. Simply pausing

and working through the full implications of a new idea for your print is an excellent way to train up a printmaking brain, whether you go on to use the idea or not.

As you become more experienced, spotting opportunities as they arise and judging how they will impact on the finished print becomes easier. I urge you to be open to changes and to take a few risks. Deciding everything up front and following plans to the letter may feel a lot safer, but it could mean a less successful print if you reject good ideas that arrive while working. It also puts a lot of pressure on the outcome: if you fix your expectation of the end result before you begin cutting and printing, you have the constant burden of living up to your vision.

## Finding your feet

As a beginner, it is easy to imagine that any successful reduction linocut must be planned to the last possible degree. That is a completely reasonable thought. A good deal of hard work and time goes into cutting and printing a linocut and the process, once started, is irreversible. A careful plan would seem the sensible way to go.

As with most things in life, reduction linocut is not quite that simple. There is an entire spectrum of approaches to developing a linocut that depend entirely on the printmaker's preference. Some like to work out a complete colour and cutting plan before starting. Others, like me, have barely any printing plan in place at all and prefer to respond to the print as it develops. There are many printmakers who fall between these two extremes.

I suggest you cherry pick from the suggestions here, and indeed from the entire book, working however you feel comfortable. Only you can know what level of planning or approach works for you and that's a good thing. Your preferences are all part of developing your individuality as a printmaker. The important thing is to make prints and plenty of them. The more you make, the more experienced you will become. You will gain an increasingly fluent and comfortable relationship with the process and gradually find and develop your individual method.

Your approach to developing prints may well change as you gain in experience. It's fine to want to rely more on planning for your first

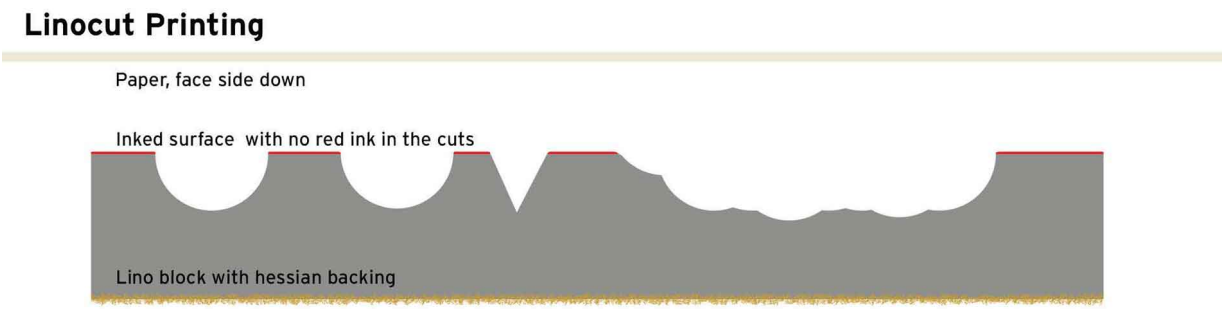
linocuts and relax more as you progress. It's equally acceptable to leap straight into cutting and printing and learn by doing. A printmaker who feels safe planning every layer at the start of their journey may drop specific planning altogether later. The opposite is also true: a scattered and experimental beginning may focus down into precise planning later. The only rule to worry about is finding a process that works well and consistently enough to give you pleasing results, which will encourage you to keep printmaking.

There are a couple of things to watch out for early on. The first is not to back yourself into a corner by playing things too safe. When you start making prints, if you focus too much on the success of the end result and not enough on the importance of learning, you risk ending up in a safe zone, relying on a set way of cutting and printing that you know will work. That approach is fine as far as it goes, but it will restrict you. It is only by taking risks and accepting you will make many mistakes, some irretrievable, that you can really push forward and continue to grow as a printmaker.

The second point is to take the time to learn good technique. This calls for some diligence: being observant, running tests on new materials and plenty of printing practice. If you learn to cut and print well, your skills put you in control of your work. You will know when and how to break out of conventional 'good' practice for dramatic effect, rather than letting random results control you. This also applies to happy accidents. Printmaking is full of potential for unexpected and random effects and some are delightful. A good skill base means you can take full advantage of any unexpected creative windfalls and recreate them for future work. The old adage 'the more you practice, the luckier you get' certainly applies here.

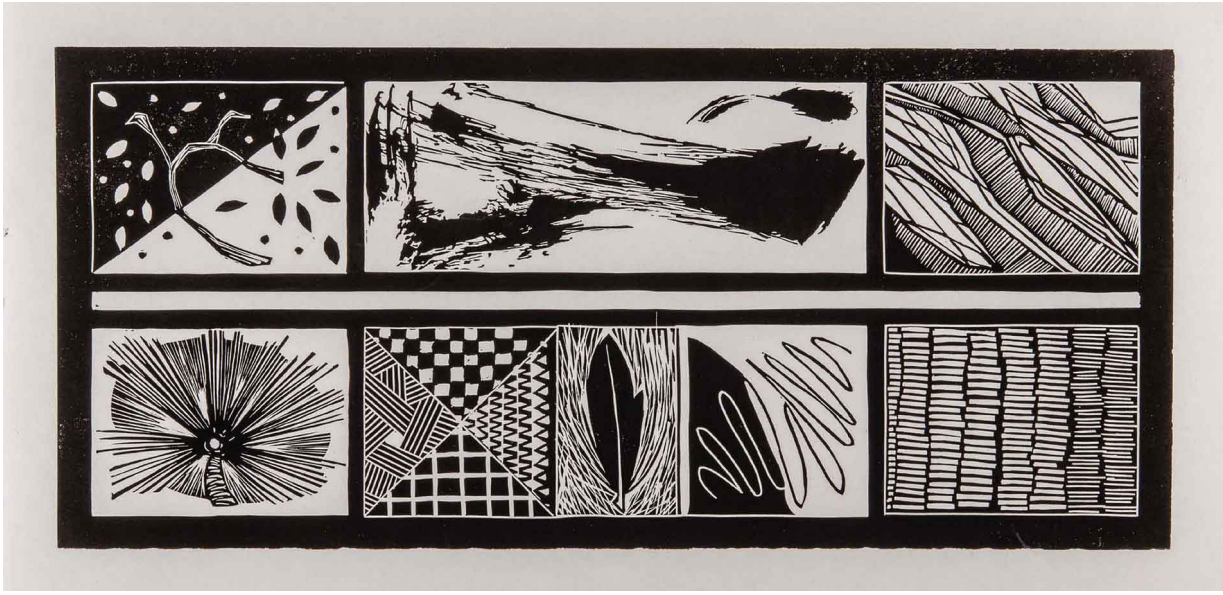
## Basics first

To develop your work from drawing to print, it is essential to understand which parts of the lino print, which parts don't print and how inking works. This sounds a bit obvious, as does the explanation: the surface of the lino is the part that prints and anything you cut away will not print.




A cross section diagram of lino showing the surface area with a layer of red ink and the cut away areas that will not print.

Understanding the rules in principle is one thing, training your brain to take the information on board in a useful way is another. You need to move from understanding the above statement as dry fact, to absorbing it to the point that you can easily visualize its implication in terms of your design. This may take some hard thinking at first, but with time and practice, your ability to picture the print in your head, explore your options and understand the consequences of each move you make will become easier. As mentioned in the section on ‘Inspiration and reference’, analysing how other printmakers have printed their linocuts is a great way to train your brain to think in print.



Cutting yourself a sampler block is an excellent way of developing cutting skills, while your mind becomes familiar with how the technique works. It will also be useful for printing practice.

A good way to speed up the learning process is to make yourself a little tester block (*see* ‘Making a one colour print’, this chapter). It can be very simple, or you can treat it as a sampler for different ways of cutting. Ink it up with a bold colour, take a print and then let the remaining ink dry on the lino. Having a physical example of the rules, cut in lino and shown in bold ink on the block and on paper, to see and to handle as you work can really help with grasping the concept.

## DEVELOPING A PRINTING PLAN ON PAPER

In developing your design, remember that reduction linocut printing is nothing like painting or drawing. Just as drawing for a linocut is different from everyday sketching, so using colour in reduction linocut is different from using colour in painting and drawing. Colour can’t be used in as many variations or isolated in the same way. In a reduction linocut you work in layers of colour, usually each one covers the whole image, and all are printed one on top of the other. Move away from the idea of each object or part of your design as always having its individual colour and embrace using each layer of printed colour in inventive ways to describe your objects and bring the design together.

Working over a drawing in tone, rather than colours is a more sympathetic initial approach to planning a reduction linocut on paper than dividing areas by colour.

It would seem that the obvious starting point for understanding how to plan your printing is to select a range of coloured pencils, or

turn to a computer, and colour in each part of your design drawing appropriately. In practice this is not such a good plan. Isolating your colours in this way is alien to the layering process of reduction printing. Colouring in your drawing will simply give you blocks of assorted colours. It will still leave you with the task of working out the printing order and you will be working with a blocky design that doesn't play to the strengths of linocut's layering process.

A more sympathetic approach is to forget colours completely to start with and think instead in shades of tone (*see* '*Nōtan*', Chapter Seven). If you break down your design into various tonal layers, you can get away from the idea of every separate object having its own colour and learn to plan in layers. This will both create a natural light-to-dark printing order and allow you to consider how best to use your cutting and colour layers to describe your image. Once you have your print worked out in layers according to tone, you are in a much better position to choose appropriate colours. You can then move into print or, if you really like pinning things down, you could re-do your plan in colour.

## PRACTICAL EXERCISES TO HELP CUTTING AND COLOUR PLANNING

Here are two exercises that will be a help in improving your understanding of cutting and colour planning. Focus more on the learning, less on the finished result. These exercises may be designed with the beginner in mind, but they are well worth revisiting from time to time if you have slumped into a creative block or you want to explore a fresh approach to colour or cutting.

### Making a one colour print

Designing and cutting a one colour print is an excellent starter project. Better still, try making several prints. Working in one colour simplifies the planning and printing of the work so the prints are quicker to make. This makes them less of an investment and you are likely to feel freer to experiment.

More importantly, think of making a one colour print as giving your brain a brisk shove into the deep end of linocut printmaking. A single colour print prevents you from relying on colour to split up and create your image. Instead, you will have to depend on your imagination and your cutting to create interesting shapes and textures, to control light and dark, and to ensure the finished image is pleasing, balanced and easy to read.

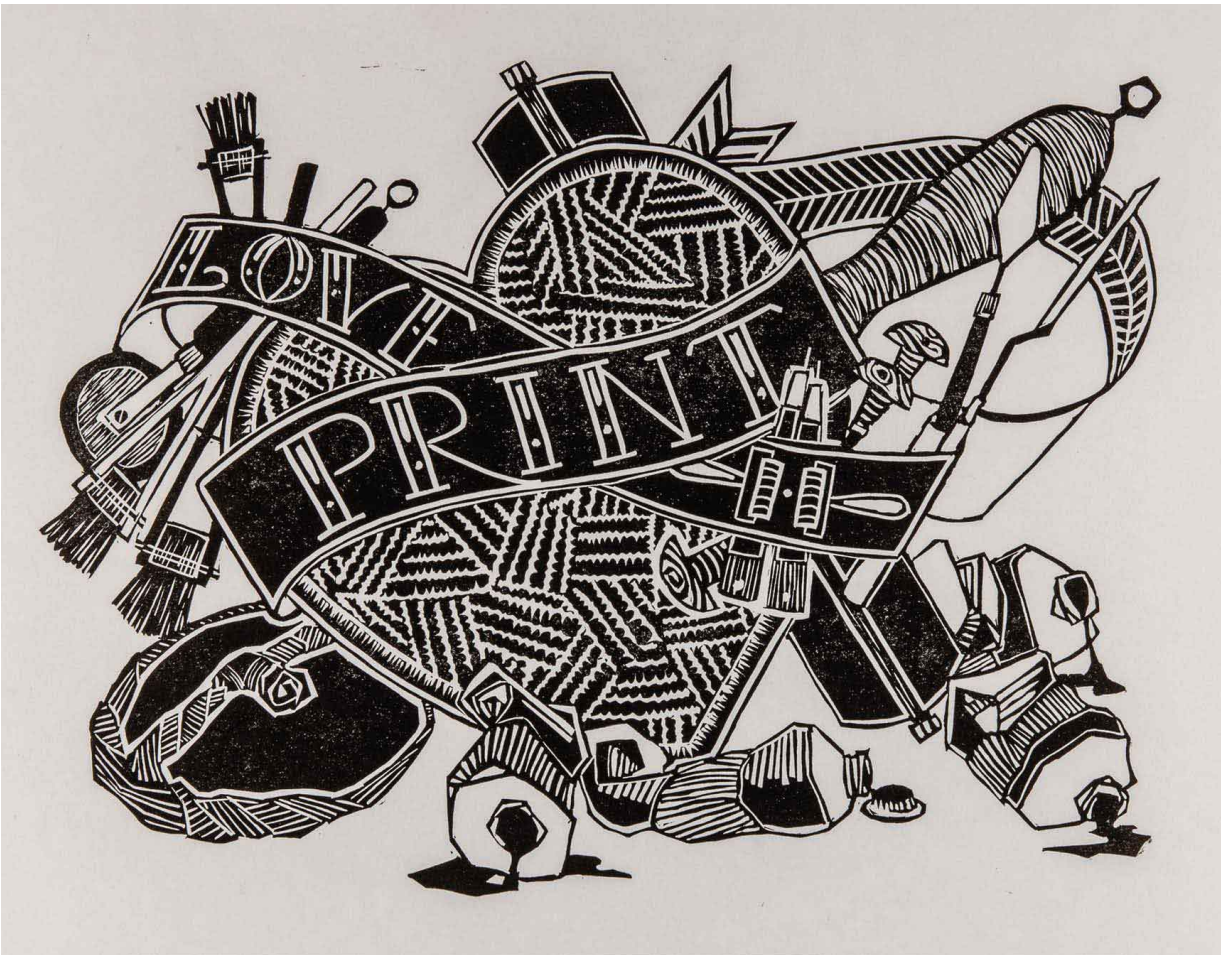
Working in one colour will develop your cutting skills and broaden your cutting vocabulary rapidly. Everything you learn while making a one colour linocut can be applied to a colour reduction print. In addition to improving your practical skills, single colour printing will help enormously with your visualization and colour planning, giving you practical experience of different cutting effects and developing your understanding of balance and composition in a print context. Save the results as a useful reference for design and mark making. It helps to make written notes on (or attached to) example prints you save. Note-taking encourages you to study the print more objectively, allowing you to really assess what works and what could be improved. Plus, it jogs the mind when referring to the work later.

While one colour printing in this context is a useful exercise on the way to colour reduction printing, don't underestimate the method as an end in itself. Monochrome prints can be rich and complex artworks of great sophistication and you may find yourself drawn to the process. Cutting and printing really well in monochrome requires a great deal of skill. Continuing to work in one colour will present many interesting challenges to your printmaking.

## One design printed in several colourways

Please see the step-by-step guide in Part Three if this is your first reduction print.

The following is an exercise I do with students in class. It helps to develop an understanding of how colour layers work in linocut and how to make the most from a limited palette. It is also a great exercise for opening your mind to the possibilities of printmaking and for relaxing your attitudes to colour realism.




While not my usual style, this one colour print has exercised my mark making and design abilities and was very enjoyable to cut.

Set yourself the task of designing a three layer linocut, something entertaining and simple. Break up your design into rough areas of light tone, medium tone and dark tone either in your head or on paper.

Mix up some small batches of coloured ink. You need three pale colours, three mid-tone colours and three dark colours. Try to get away from mixing the ‘right’ colours and mix up any colours you fancy, be bold not literal!

Following the step-by-step guide in Part Three, print up an edition of assorted colourways. The aim of the exercise is to encourage you to use colour in a different way. Creating this set of variations will give you plenty of cutting and printing practice. It will also test your registration skills while you line up the three layers for inking.

Using such a random mix of colours for printing means you are unable to obey conventional colour rules and allocate specific colours to the ‘right’ place. Instead, you are forced into using each colour layer to create shape, form and tone across the whole image rather than using the ‘correct’ colours in their usual place. This exercise will teach you to use each colour layer wisely for maximum effect.

Hopefully, there’s a bonus too. You will have produced some surprising colour combinations and may find yourself gravitating to colours you never thought would work together. One of my favourite examples involved a student who began work very anxious to make her print as realistic as possible. By the end of class, she’d cheerfully rejected her blue whale swimming in sea green water in favour of a purple whale cavorting in a pink and orange ocean. A colour combination which, unlikely as it sounds, had far more visual appeal and successful impact than the realistic version.

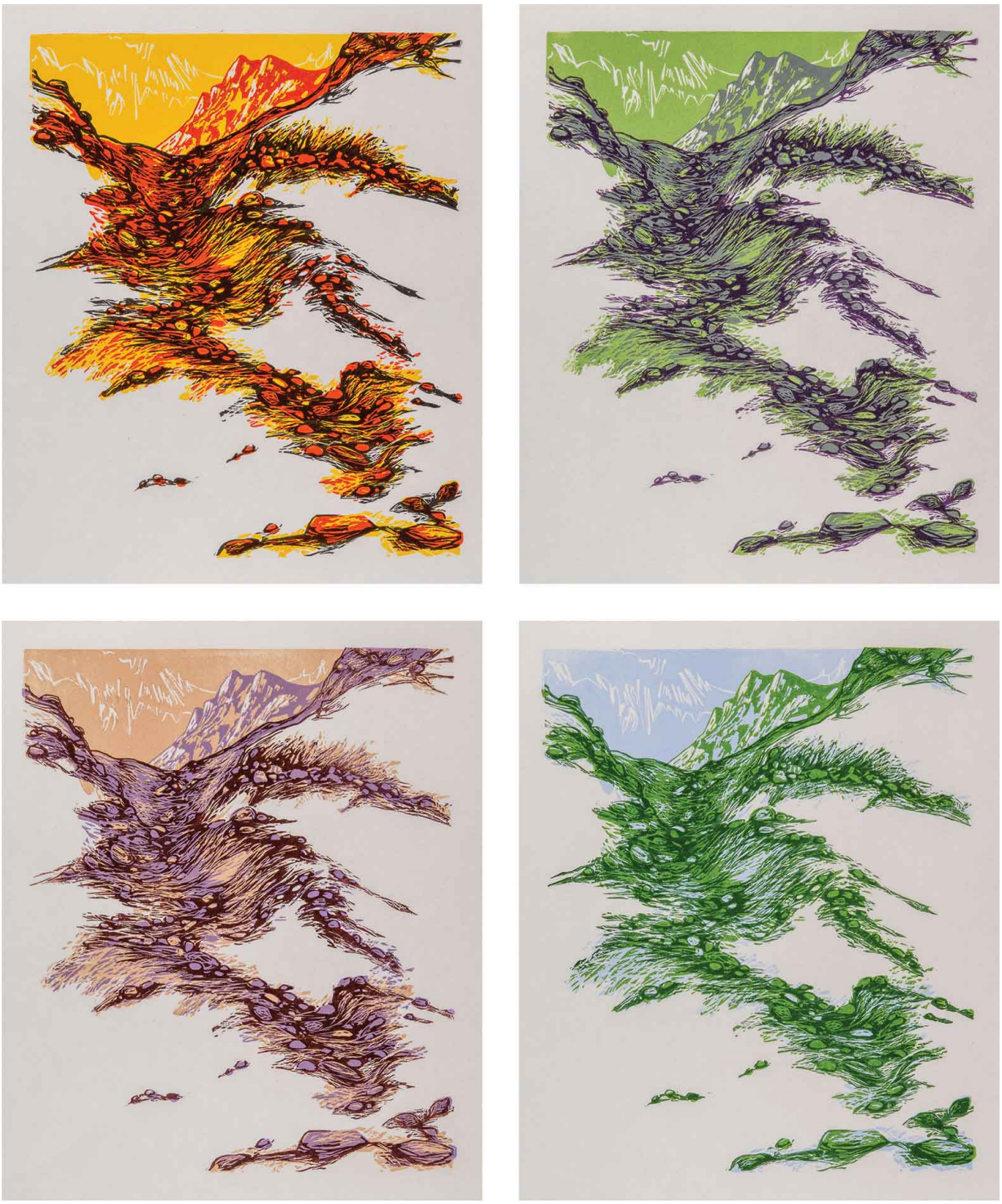
## FINAL ADVICE BEFORE YOU START

Here are a few words of advice to steady your nerves when you face the uncut lino for the first time.

### Get comfortable and remember to breathe

This is an easy one to forget in the excitement of getting started. It may also take some organizing if your space is shared or limited. Cutting requires care, diligence and concentration and all are much easier to give if you are comfortable. It’s also safer. You are less likely to mis-cut the lino, cut yourself, or put strain on your shoulders, neck and back if you are properly positioned. Check that you have a good chair at the appropriate height, the lighting is bright, and your desk or slope is right for you (*see* ‘Cutting Techniques’, Chapter Two). I mention breathing too because I am guilty of holding my breath as I work. Try not to do this. It will tire you and put a strain on your body. You might like to set an alarm to remind you to have a stretch and walk about occasionally. It’s very easy to lose all track of

time while you work and come down to earth several hours later cramped and sore.



A three-layer linocut printed in assorted colourways. Taking a step back from literal colours and spinning the wheel of chance is an eye-opening exercise and can lead to some interesting colour ideas.

## Colouring in

Try using a white chinagraph or pencil to shade in the areas you want to cut. Since linocut is almost always printed from light to dark, this is a useful way of visualizing which parts of the lino need to be cut away. The darker areas of unmarked lino will help to suggest a layer of darker ink while the areas marked in white will give an idea of what you need to cut. Remember that anything you cut in lino will appear on paper either as an unprinted area of paper if you haven't printed yet, or as an area of the colour you have just printed.

The white chinagraph indicates where the lino is to be cut away, giving a clear guide to the first cuts needed.

## Begin with what you know

When making the first cut, go for an area you know for certain needs cutting. Leave areas you feel doubtful about until the first job is done. This will help you to get past taking the initial plunge. As you relax and get more comfortable with the tools, you are much more likely to find you can decide what needs doing next and can move on.

## Take frequent rubbings to check your progress

Putting a sheet of thin paper, newsprint is ideal, over the lino and rubbing with the side of a soft pencil or stick of graphite will give you an immediate guide (*see* 'Cutting tools', Chapter Two). The rubbing will be a mirror image of the finished print, but you will be able to see the part that prints marked in graphite, while the unprinted areas will show as plain paper. Remember that rubbings may show more chatter (random pick-up in cutaway areas) than a print as you are likely to push the thin paper down into cut areas while you rub.

## Get the most from every layer

Look at the whole print when judging what needs cutting, don't just focus on one area. Always try to get the maximum use from every layer that you cut and print. Could you use your cutting of the current layer to help define a shape, add a sense of distance or volume, add highlights or add decorative detail to the finished print? You don't need to make all your decisions about all layers up front or hold them in your head as you work. Focus more on what each layer can do for the print.

## When things go wrong

If things go wrong, there is almost always a creative solution. A part of your skill as an artist, and particularly as a printmaker, is to be imaginative and adaptable. Working out how to navigate a mistake is an excellent exercise in visualizing and exploring your options. Your solution may well be a benefit to the end result. Occasionally you will either make a mistake so disastrous or a print so unsatisfactory that you have to abandon your work. Try not to see this as a complete loss. It happens to me still, unsurprising as I am always experimenting. I accept however experienced I get that mistakes are an inevitable part of the process. With every edition I trash I learn

something new. While I am naturally disappointed, I never see the destroyed prints as time wasted.

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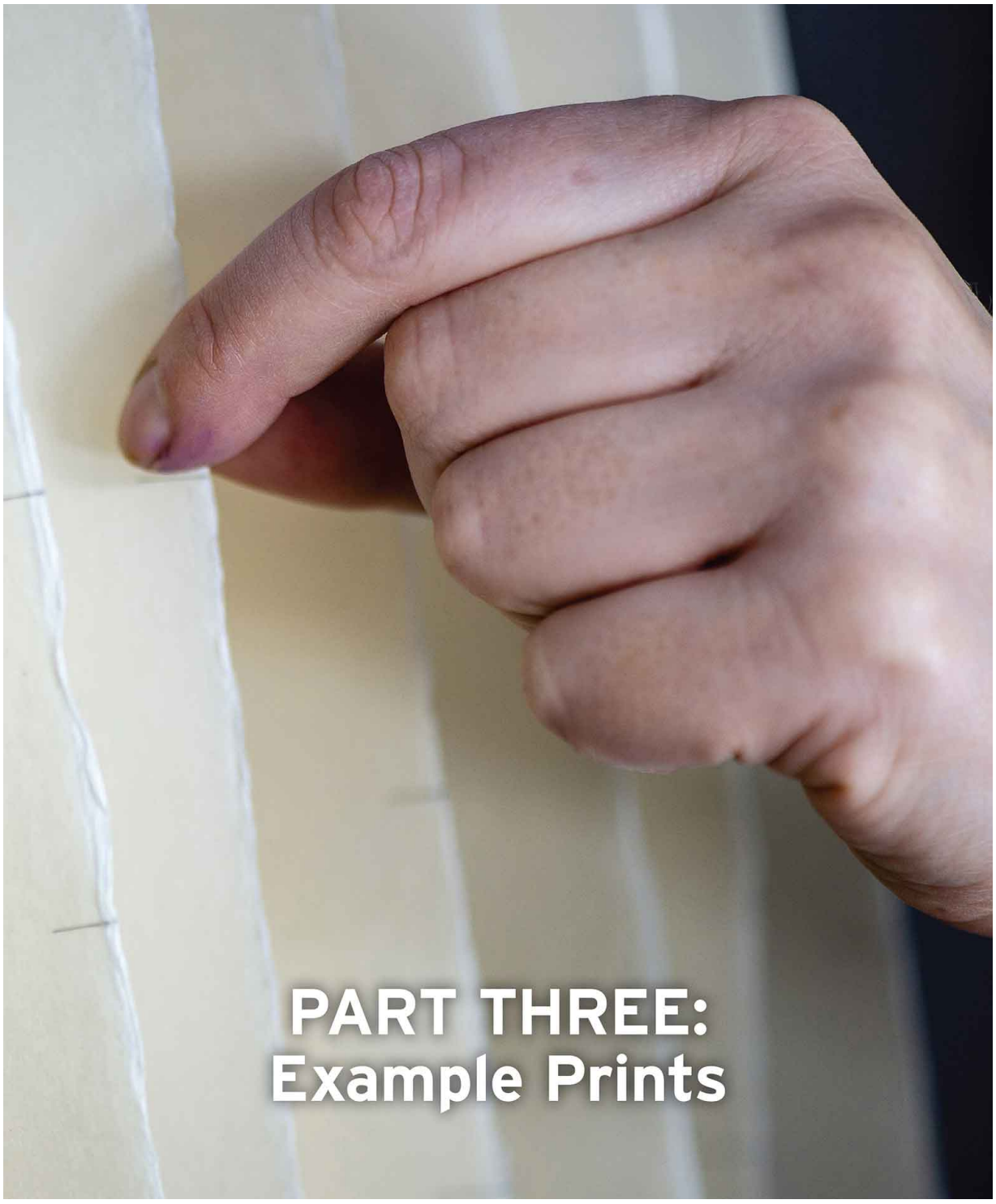


# PART THREE:
# Example Prints

This section of the book is devoted to exploring a series of example linocuts, explaining the printing process and the techniques involved.

Print one, *Apples and Swallows,* shows the entire process of reduction printing from drawing to finished print and includes photographs of lino marked up for cutting and the cut lino. It includes notes on cutting technique as well as printing technique.

*Apples and Swallows*, a reduction print with four layers of flat colour and a simple frame.

The next seven prints have been photographed in two ways. Those labelled **A** show each colour layer individually to illustrate colour choices and inking technique. Those labelled **B** show the build-up of colour layers from first layer to finished print.

Prints one to five were printed onto a Japanese Hosho paper (80gsm) and the final three were printed on Fabriano Rosaspina paper (285gsm). The prints were all printed on an Albion relief printing press using traditional oil based printing inks. Where I have used additives and modifiers such as driers or extender, it is mentioned in the captions.

The final two prints are case studies from my own editioned work with notes on my colour layers and cutting.

## MY USE OF WAX DRIER

I regularly use wax drier to speed up the drying times of my oil based inks, but its use is entirely optional. All the prints in this section were left to dry between layers. With the exception of one small cloud, nothing was printed wet on wet.

You will notice different proportions of wax drier used in the examples below. I add drier by eye, so my measurements are not completely precise, but I do constantly vary the amount of drier I use. This depends on a combination of factors: the absorbency of the paper, how thickly the ink is applied, the colour of the ink, the weather, which layer of the print I am working on, how much lino the ink is covering and how quickly I need the print to dry. I prefer to keep drier to a minimum in my ink, mainly because I often use the leftover ink from one layer to mix into the next and I like the ink to stay as open as possible while mixing.

Since the recommended maximum amount of drier to add to ink is 4 per cent, I am dealing in tiny increments from personal preference. I have given the various percentages more to show it as an option. You may prefer to just add a standard amount of drier to any ink that needs it. It is more important to decide whether a mix of ink actually needs drier or not.

# Print one: Apples and Swallows

18 × 15cm on *Hosho washi* paper
This linocut is printed in four flat layers of opaque ink.

**The design drawing:** this is the basis of the print and forms the skeleton of the design. It is drawn to the size of the finished print and its sketchy lines will be edited down into clear outlines at the tracing stage. Details will be added directly to the lino as the print evolves.

**The tracing:** the design drawing has been edited down into a clear outline drawing for transfer to the lino. These outlines will be the basis for the print. They are not set in stone and can be altered as the work develops, but in this print example, they remain constant. More details are added to the design as each layer is cut.

**The transferred design:** the tracing was transferred to sanded and stained lino using carbon paper. The design is now in reverse, ready to mark up and cut.

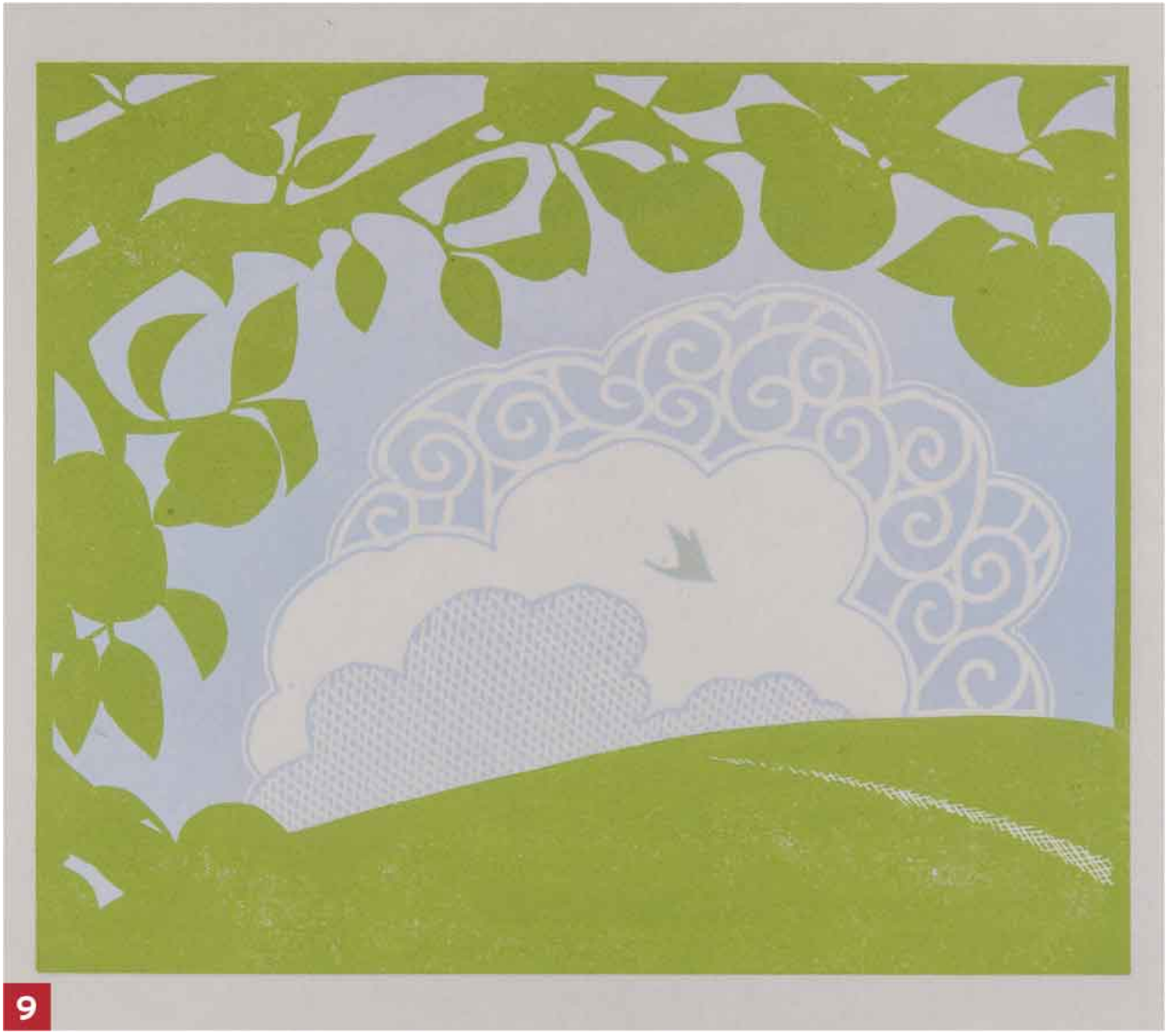
**Marking up:** a white chinagraph was used to mark out the areas to be cut away before the lino is printed for the first time. Chinagraph is easily removed with a slightly damp cloth for corrections. It does not need to be removed before printing if any remains on the block after cutting.

**First cutting:** a small U gouge was used to cut the cloud with the narrow check. A wider U gouge was used for the curvy design in the other cloud. Using U gouges for this type of cutting makes it easier to get a cut of consistent width. The central cloud is cut more deeply than the patterned clouds, as it is a larger empty space. The lines on the path are shallow and cut with the tip of a V tool.

**First layer of ink:** the entire print was evenly inked in a layer of opaque pale blue, thin enough not to flood detail, but thick enough to give full coverage. No driers were needed in this first layer of ink as the absorbency of the paper ensured it dried very quickly. Note there is no transfer from the carbon or stain.

**Mark up for the second layer:** the sky is marked up to be removed. It is helpful to mark up the small patches of sky in the detailed areas so that they are not missed and to mark them as separate from the frame, which must remain uncut until the final layer. Note how the stain has faded with cleaning.

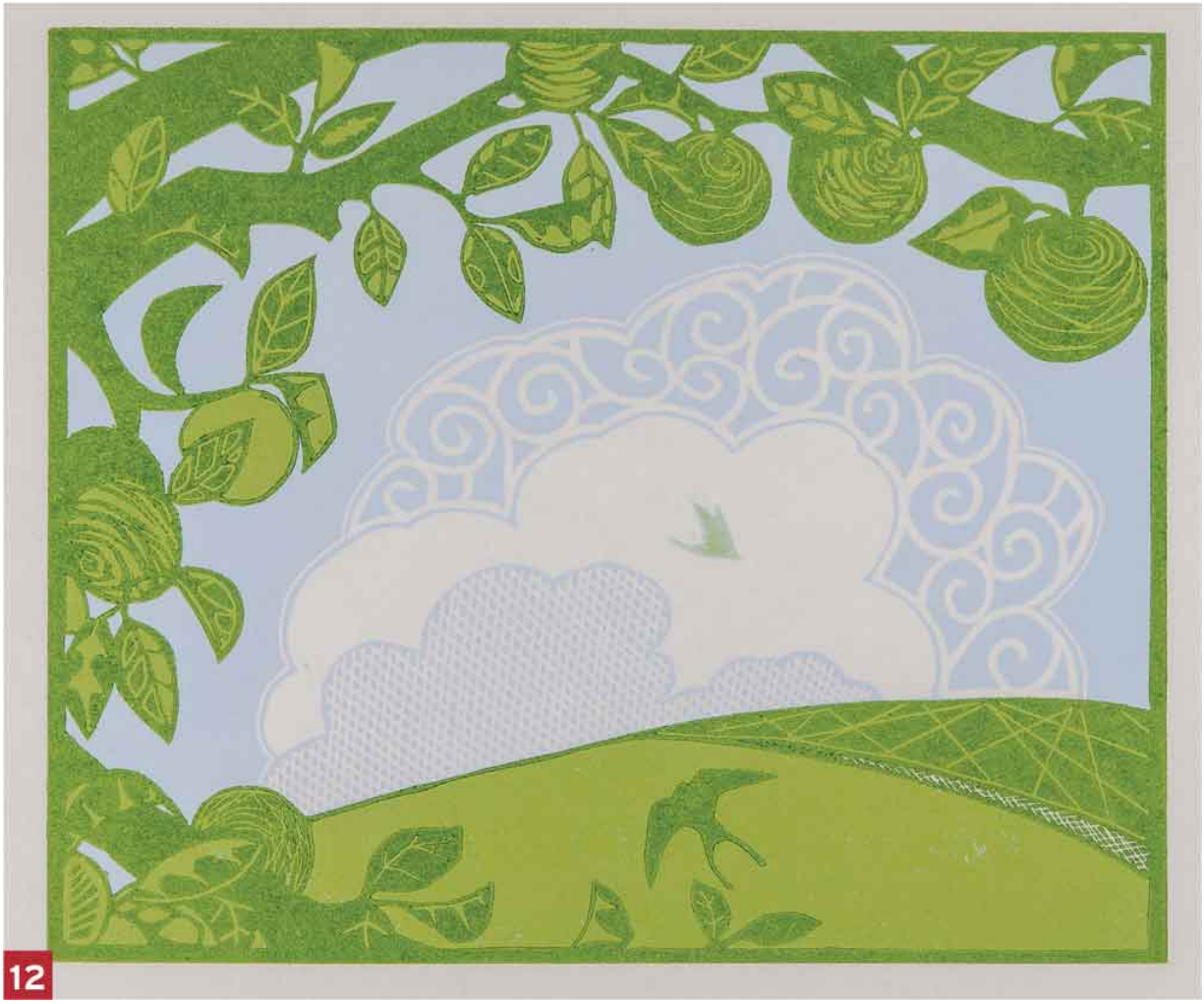
**Second cutting:** with the clouds removed, the cut away area is now very large in comparison to the rest of the image and is cut deeply and all ridges are smoothed away to prevent chatter. The smaller areas of sky are cut less deeply using a combination of V tools and a Japanese *hangi-to* knife to remove the small sections of sky between the leaves and branches (*see* ‘The *hangi-to* knife’).




**Second layer of ink:** the pale green was applied in a thin layer creating a slight texture in the fields. This is a matter of personal taste and a slightly thicker application of ink would give a smooth layer. Notice that the swallow in the centre has been wiped clean. It will appear black in the final image and wiping away other colour layers keeps this tiny detail from getting clumsy with unnecessary layers of coloured inks. It will be printed in black at the last inking. A small amount of wax drier was added to the ink, about 2 per cent, and the print left to dry. It is important that each layer dries thoroughly before applying the next ink layer. The level of cutting detail is increasing and printing with damp layers will risk the print becoming clumsy and soft.

**Marking up for the third cutting:** a pencil, rather than a chinagraph, is used to mark up the fine detail cutting for the decorative leaves, field patterns and fruit. Chinagraph is too soft for marking up very fine detail. Any remaining pencil will need removing with an eraser or a wipe of solvent before printing to avoid any risk of it transferring to the print.

**Third cutting:** this is the most detailed layer of cutting. Most of the cutting is done with the same small U gouge used to cut the chequered cloud in the first cutting, with a little additional clearing using the tip of a V gouge. The cuts are relatively shallow, and the margin is left uncut.




**Third layer of ink:** the layer of darker green ink is applied in a thin layer using a roller that is wider than the linocut. With so much of the centre cut away a small roller could easily tilt into cut away areas, depositing unwanted ink and giving a patchy finish; a wider roller can rest safely on the frame during inking. The centre swallow is wiped clean again. The other bird is too close to the leaves to wipe safely. Wax drier is added to the ink at about 2 per cent and the print left to dry thoroughly before the final layer.

**Mark up for final layer:** back to using the chinagraph for a clear mark up of the layers to be removed before the final cutting. It is important to keep the chinagraph in the right places when marking up, especially if you have a border, as here. It is so easy to cut on autopilot following the white marks rather than your intentions and end up removing more lino than planned, even when it seems obvious you shouldn't do so.

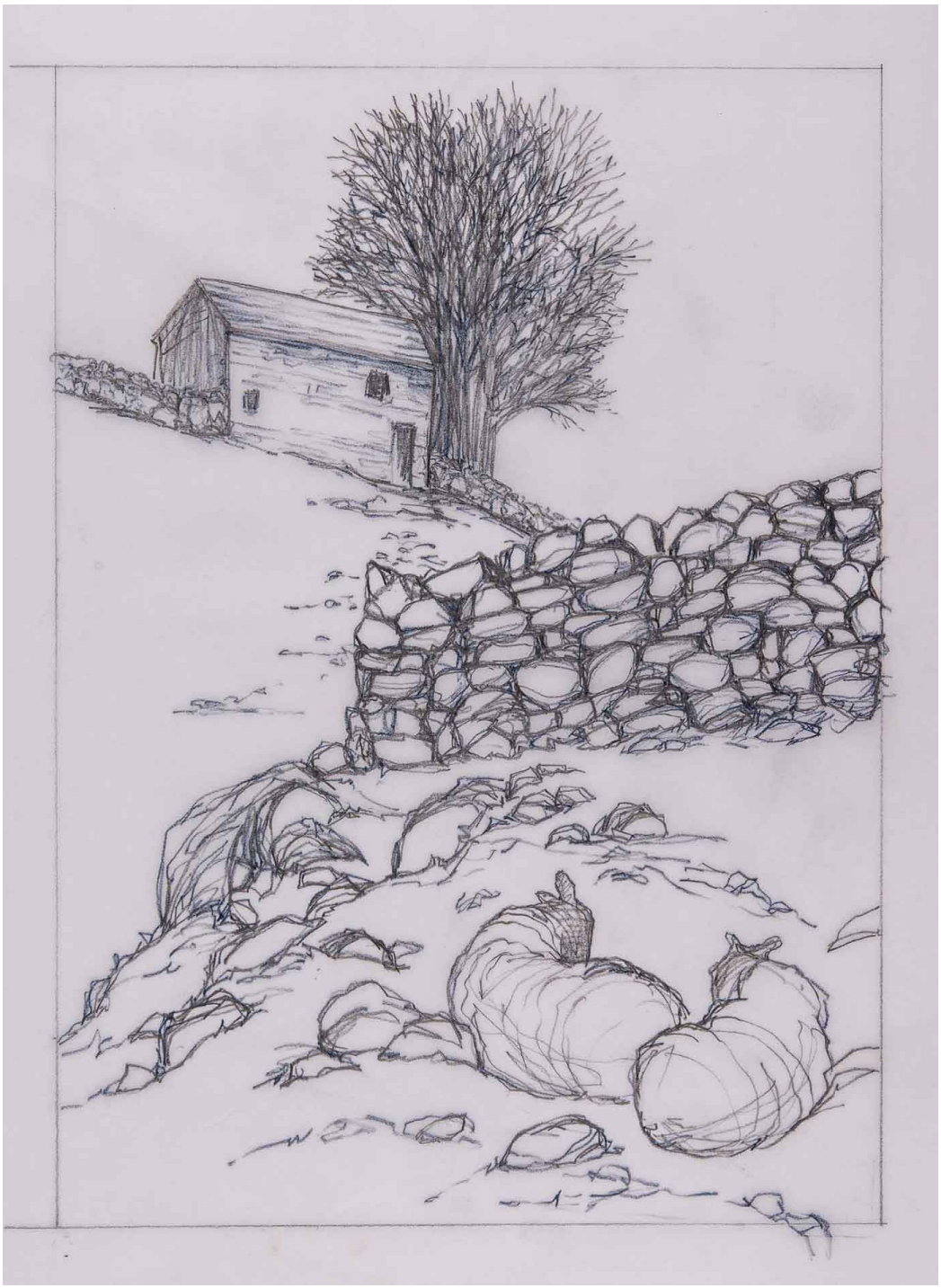
**Cutting the final layer:** all details are removed from the leaves and fruit to leave a thin outline of remaining lino. This is done systematically (*see* ‘Cutting inside a shape’) using a combination of U gouges. Note the cuts around the outside of the leaves where they overlap the branches. These narrow cuts with the small U gouge are enough to visually separate the leaves from the branches.

15

**Fourth layer of ink:** like the third layer, the black ink was applied with a wider roller. It is important to check the entire frame edge is properly inked. Wax drier is added to the printing ink at 4 per cent (the maximum amount). Black ink can stay open for a long time, and the higher proportion of drier will ensure a much quicker drying time, especially on the wider branches.

# Yorkshire Barn series

Each of this set of prints is based on the same design drawing of two sheep and an old stone barn in North Yorkshire. The cutting varies slightly between each print, but it is the inking that makes the real difference, producing four quite different results from the same design.



This single design drawing provides the source of four different reduction prints showing how different inking techniques can change a print.

# Print two: Yorkshire Barns, Trees and Clouds

17 × 24cm printed on Japanese *Hosho washi* paper

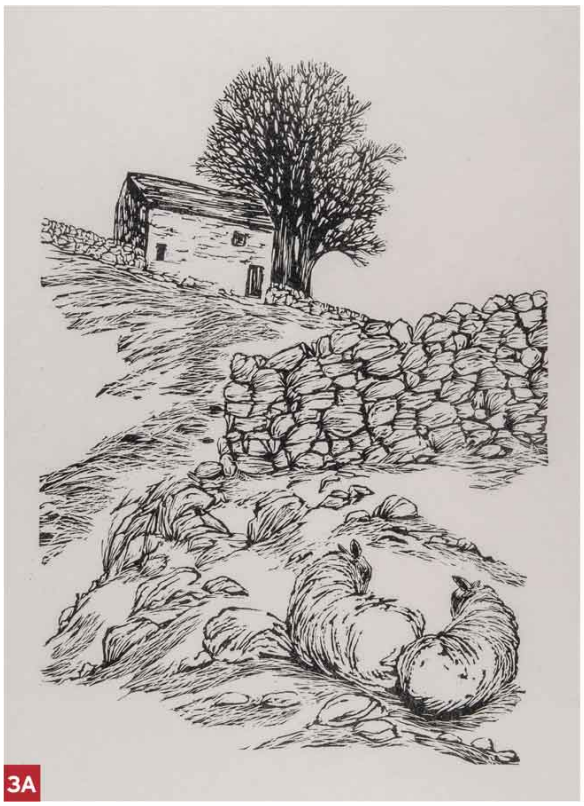
This print was printed in three flat layers of evenly applied opaque colour. In these sequences, image A shows the individual layer and image B shows the combined layers.

**Layer one:** the ink was applied in a thin layer, but with complete coverage to ensure further flat and even coverage from the following layers of ink. No wax drier was required at this stage to speed up drying; the *washi* paper is absorbent for its weight. This layer of printing required a strong pressure to get an even consistent layer of ink over a wide area. Getting an even print at this first layer makes printing the following layers evenly much easier.

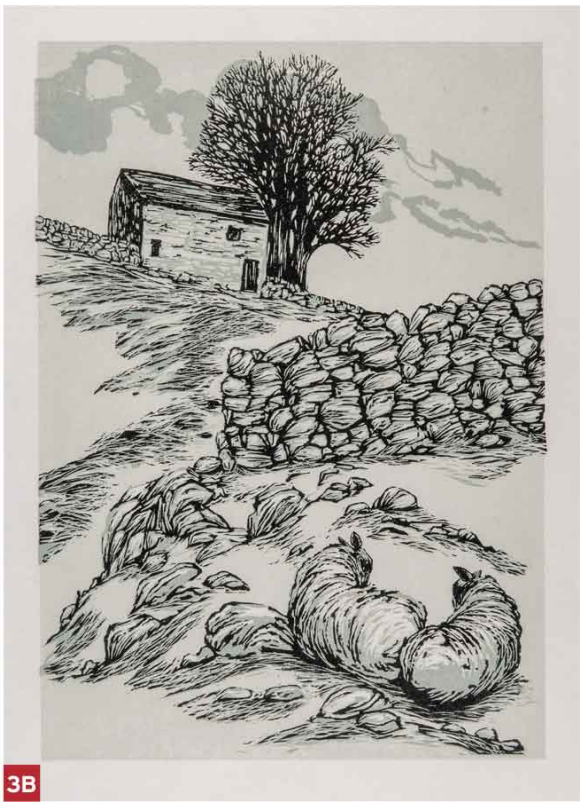
2A

2B

**Layer two:** the cloud shape was created by painting directly onto the lino to mark up for cutting (*see* ‘Incorporating brush marks into the design’). The printing pressure was reduced for this layer to ensure the detailed cutting remains clear and a small amount (2 per cent) of wax drier was added to the ink.

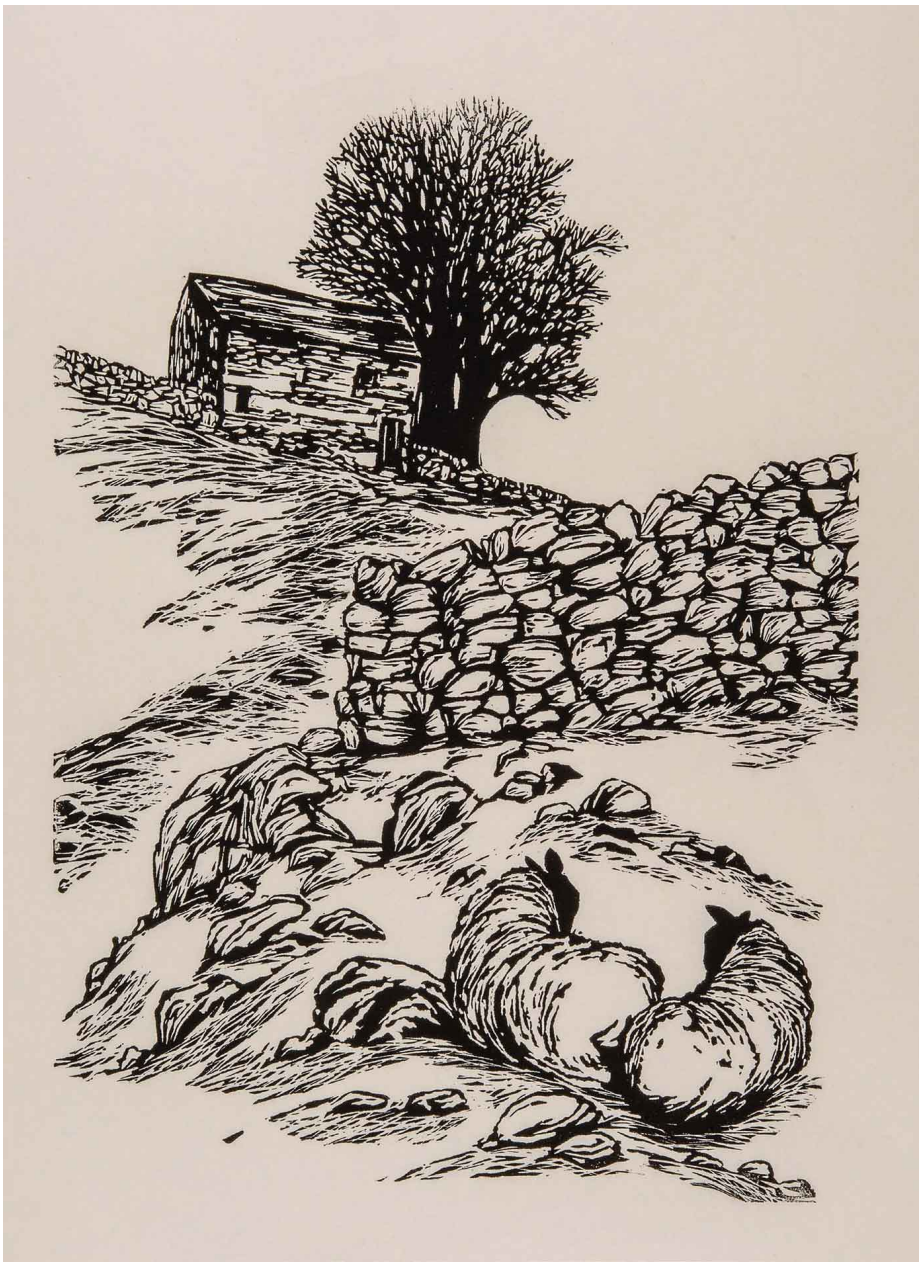


3A



3B

**Layer three:** the final layer was printed with very little pressure as it consists of fine line detail that needs to remain crisp. A small amount of wax drier (2 per cent) was added to the ink. There was no need to add a higher percentage of drier as there are no large areas of black ink on the print.



**A bonus:** sometimes the final layer of a reduction print contains enough detail to stand alone as a single colour linocut. Here the print could remain as it is, or be hand coloured with crayons or paint if desired. Watercolour or gouache work well as paints for spot colouring. When adding colour by hand, less is usually more and a few spots of carefully added colour will have more impact than colouring every part of the print. Spot colouring also avoids cockling the paper with too much wet paint.

# Print three: Yorkshire Barn, Sunset

17 × 24cm printed on Japanese *Hosho washi* paper

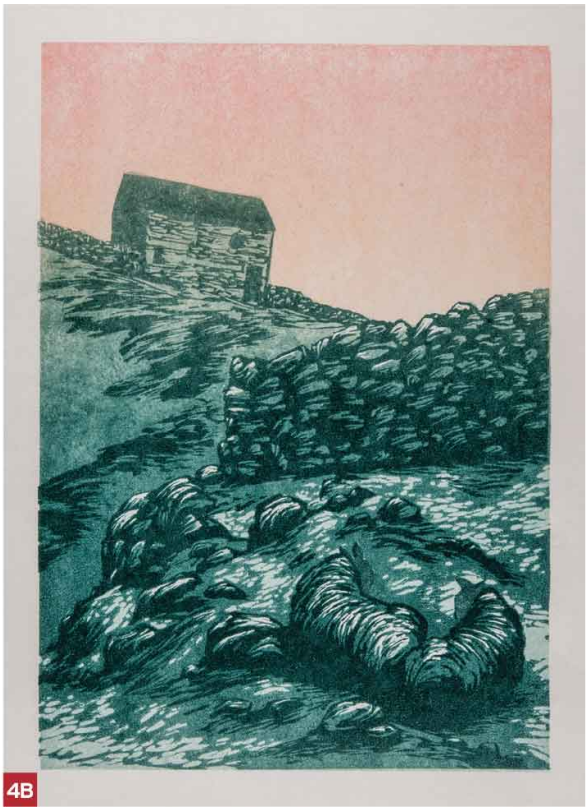
This print was printed using very extended inks and some rainbow roll techniques. It was printed in five thin layers with some texture.

**Layer one:** approximately 3 per cent of ink was mixed to 97 per cent of extender for a transparent layer. The layer was printed as a partial rainbow roll (*see* ‘Rainbow rolls’) with the ink on one half of the roller and the other half left un-inked. No drier was used; the inking is very thin and the paper’s absorbency ensures fast drying in the early layers.

**Layer two:** this blue green colour was used on all the remaining layers, used with less and less extender. Here the ink was mixed with extender at about 4 per cent. The colour bleed from the sky shows slightly through the ink, useful for creating a convincing evening light in the final print. No drier was used.

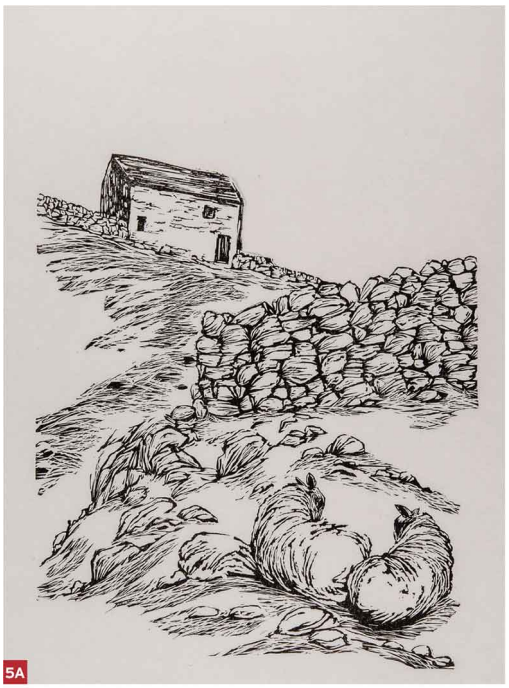
**Layer three:** the blue green ink was mixed with extender at a slightly higher concentration, about 15 per cent, to give a darker result from the last layer. It was printed as a partial rainbow roll like layer one to create a sense of distance in the top section of the landscape. The ink was applied in a very thin layer and gives a texture. The texture of the ink laid down in the previous layer helps encourage more texture on this layer. Wax drier was added at 2 per cent.

4A

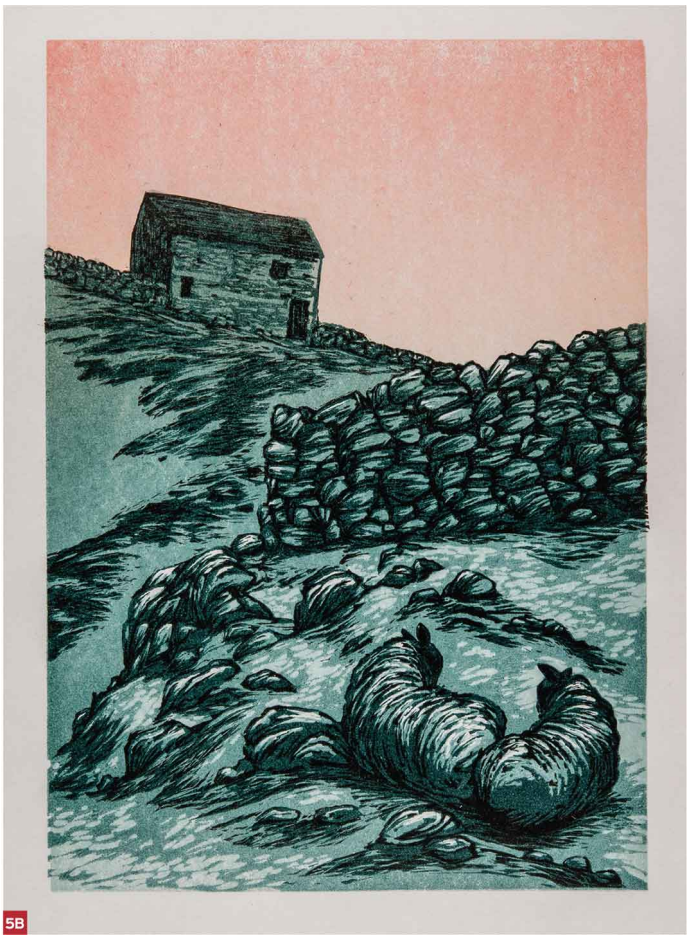


4B

**Layer four:** the blue green ink was mixed at about 40 per cent ink to 60 per cent extender for this layer and wax drier was added at 3 per cent. In addition to the drier, some talc was mixed into the ink to stiffen it before it was rolled out. The combination of ink and extender tends to be a slightly softer and stickier mix than ink alone. Adding a little talc ensured that the ink mix gave a crisp detailed result when the block was printed (*see* ‘Additives and modifiers for ink’).



5A



5B

**Layer five:** the final layer was printed once the print was completely dry. A small amount of wax drier (2 per cent) was added to the black ink. Prints made with several layers of highly extended ink, as in this example, can appear softer and more blurred if printed wet-on-wet than prints made in the same way with printing inks and no extender. Unless you want a soft effect, it is always best to let the print dry thoroughly between layers in this situation.

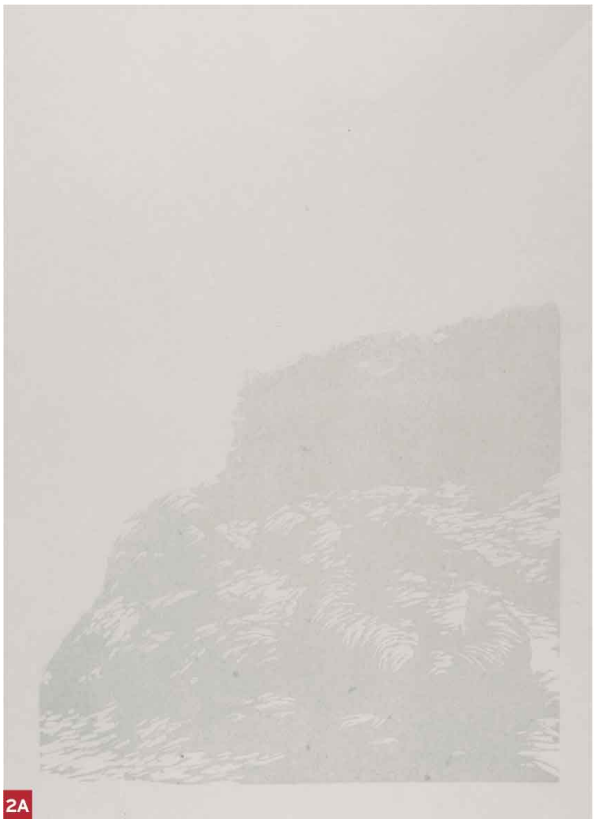
# Print four: Yorkshire Barn, Winter Mist

17 × 24cm printed on Japanese *Hosho washi* paper

This print is printed in a combination of five flat opaque layers in the foreground and very extended and thin inks in the background. A plastic mask was used to split the image in half for inking.

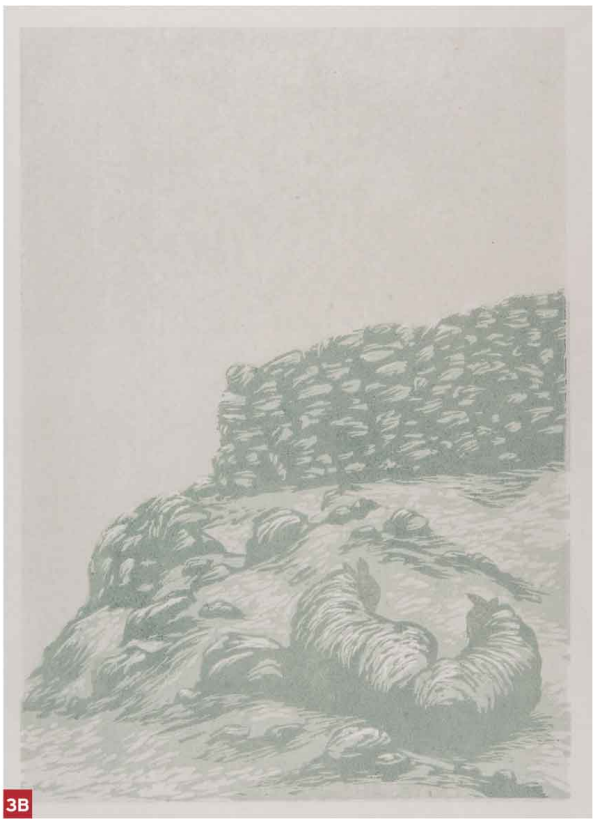
**Layer one:** an opaque ink with no extender was printed at a firm pressure to ensure even coverage. No drier was needed at this stage.

**Plastic mask:** to create the misty effects needed in this print, a piece of plastic was cut to fit the print, masking off the top area of the design. It was attached to the backing board with masking tape hinges. This allowed me to print the bottom half of the print entirely separately from the top.


2A

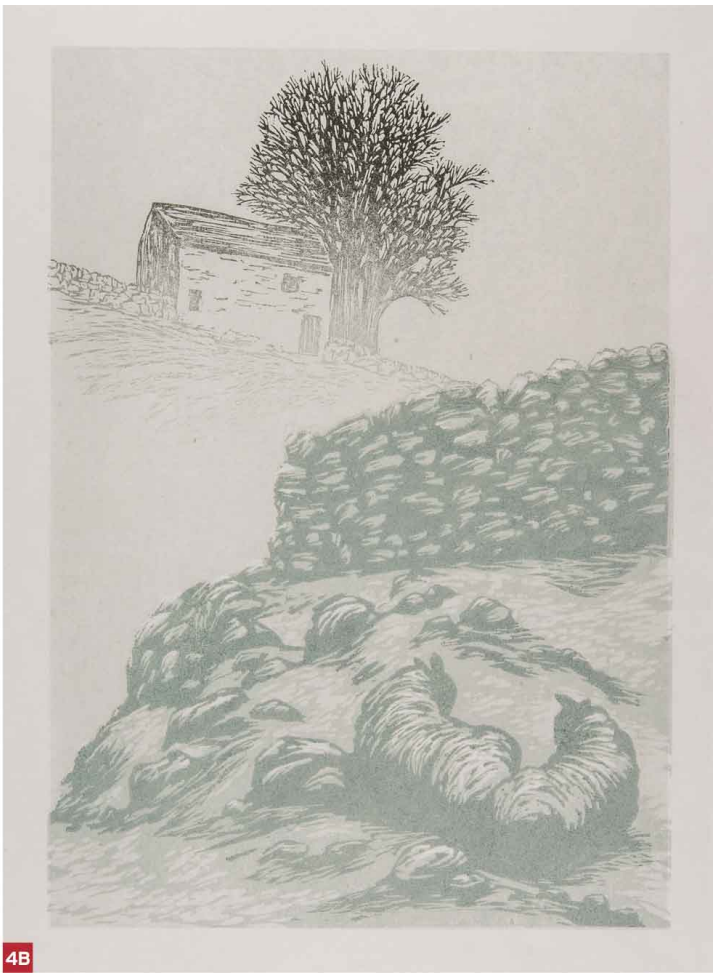
2B

**Layer two:** using the plastic mask, the next layer of opaque ink was added to the foreground only. The ink here was printed a fraction thicker than usual to bring solidity to the foreground of the print and provide contrast to the misty background. The ink contained wax drier at 3 per cent. The inking was not so thick as to lose any cutting detail, but thick enough for the ink to benefit from the drier.



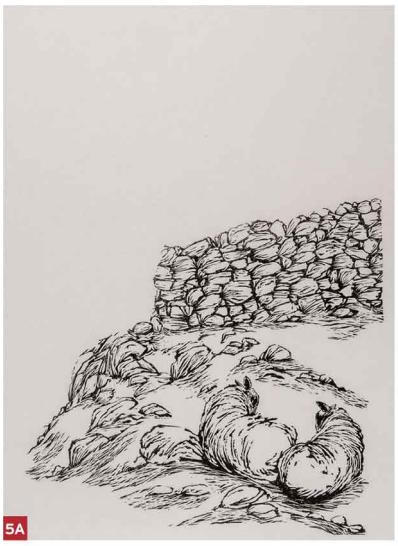

**Layer three:** still using the plastic mask, this layer was printed in a transparent grey ink mixed at about 30/70 ink to extender. Wax drier was used at 3 per cent and the pressure of the press reduced to accommodate the slightly softer extended ink and finer detail cutting.

4A

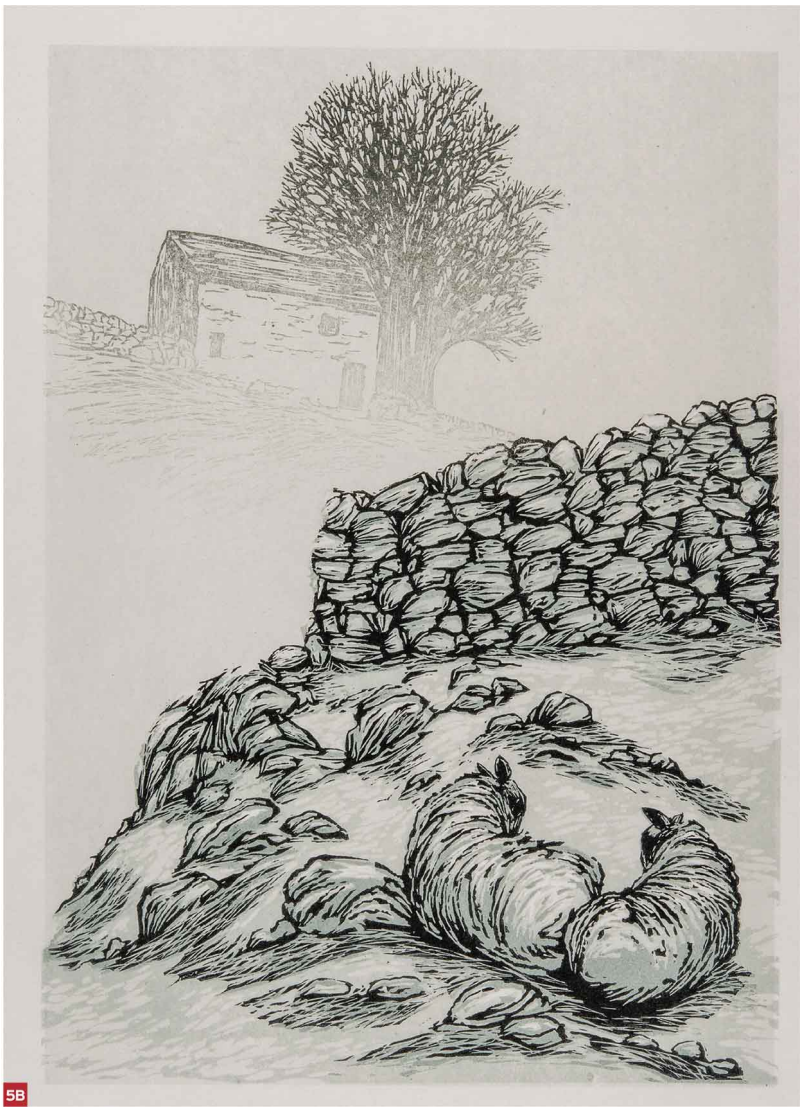


4B

**Layer four:** the mask was removed. The remaining lino was inked up using a partial rainbow roll. The partial rainbow was created using an extremely thin layer of black ink in one half of the roller, which was worked into a bleed with the other half of the roller remaining un-inked. Only the background was printed in this layer except for a small amount of inking of the dry stone wall in the foreground. Any surplus ink in the foreground is covered by the final inking and has no impact on the print, so no mask was needed to separate the two areas for this layer.



5A



5B

**Layer five:** the plastic mask is used again to isolate the foreground for a layer of black ink. This is printed at a low pressure to ensure the detail is crisp. Wax drier was added at 2 per cent.

# Print five: Yorkshire Barn, Winter Sun

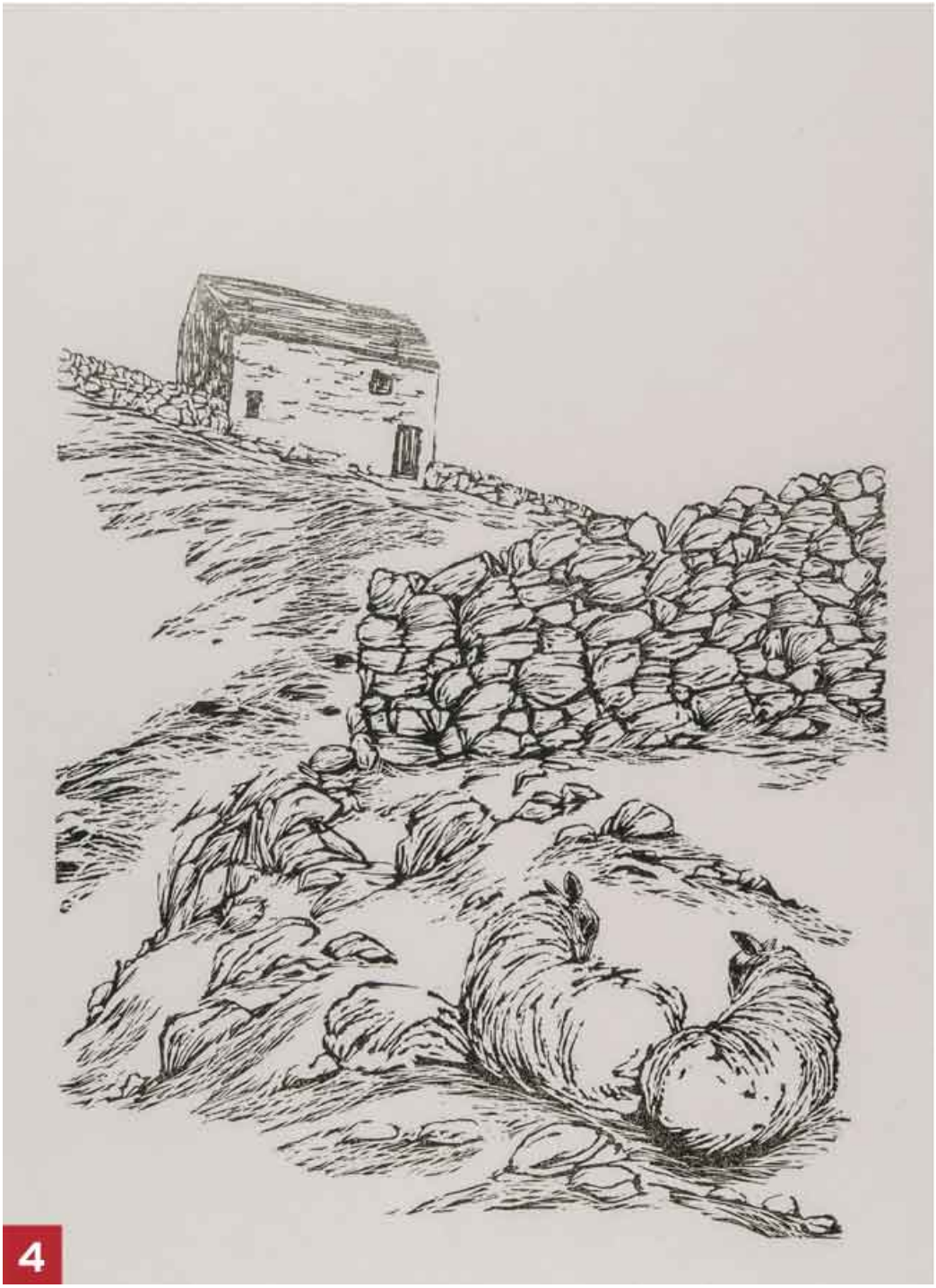
17 × 24cm printed on Japanese *Hosho washi* paper

This print was printed in four layers using a plastic mask. The land was masked while the sky was printed using the same method as *Yorkshire Barn, Winter Mist*.

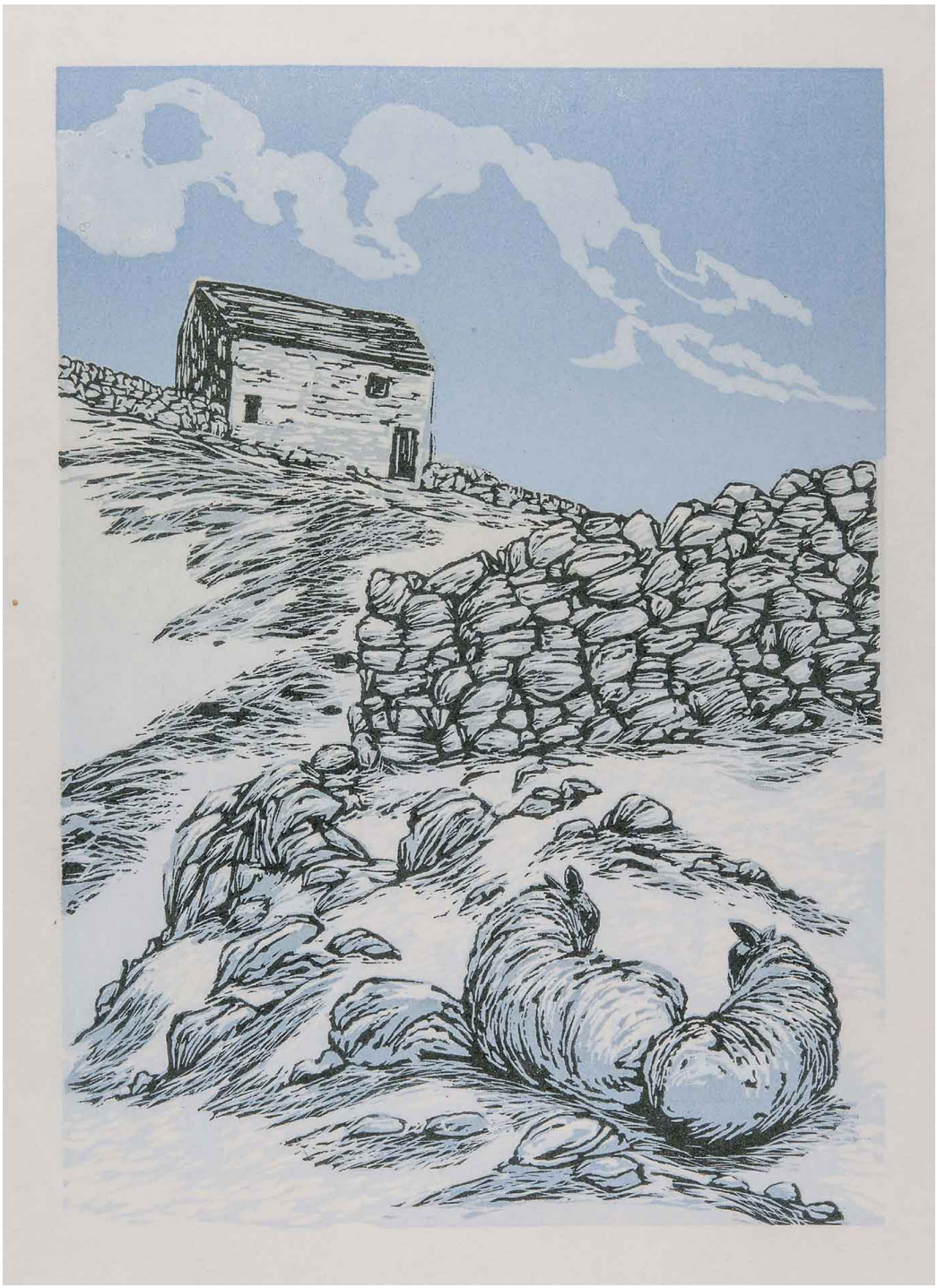
**Layer one:** this layer was printed in a rainbow roll of opaque ink from grey to pale blue, no drier or extender were used.

**Layer two:** a plastic mask was used to mask off the landscape area while the sky was printed in a very subtle light to dark rainbow roll of opaque blue without extender. The thin inking gives a little texture to the sky and wax drier was added at 2 per cent.

**Layer three:** this layer was inked using two rollers. The landscape area was inked with a rainbow roll of opaque ink from grey to blue with wax drier at 2 per cent. The white cloud was inked using a small roller and opaque white ink with wax drier at 4 per cent. The cloud was inked up and printed twice, wet-on-wet. Double inking gives the white ink the impact needed when printed over blue ink. The higher percentage of drier in the white ink was to speed up the drying time for the thicker double layer of ink.




**Layer four:** the final layer is printed with a fine layer of black ink, rolled out more thinly than in previous example prints in order to balance this layer with the paler colours.



While still printing as black, the thinner application gives the ink a slightly more subtle appearance in tune with the rest of the print. Wax drier was used at 2 per cent.

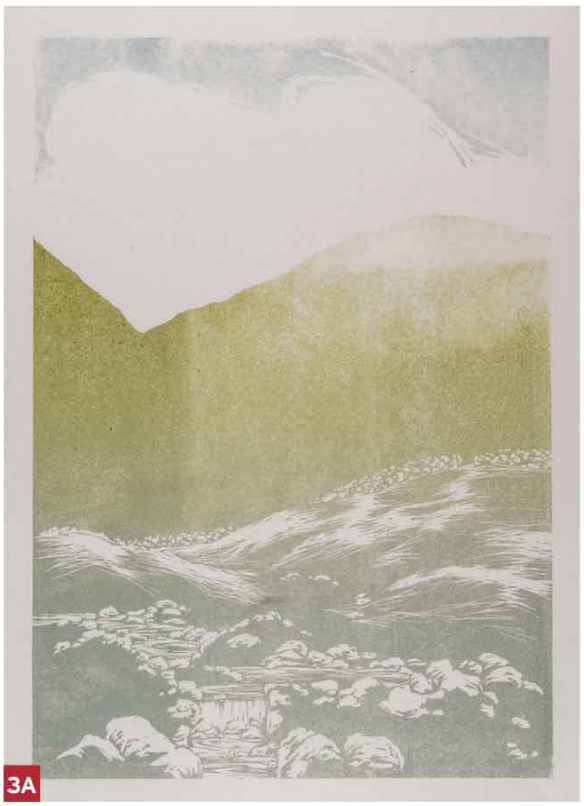
# Print six: Windy Day, Moving Grasses

23 × 33cm printed on Fabriano Rosaspina paper

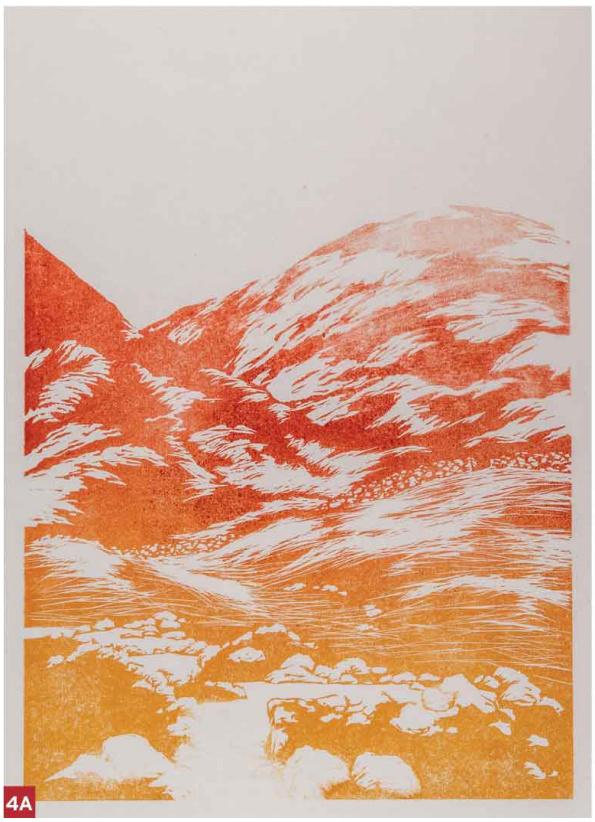
This print is printed in six layers in a series of rainbow rolls using inks mixed with extender. Areas of ink are wiped away with a lint-free cloth. There is some partial inking using two rollers to ink the sky and landscape separately on a single layer.

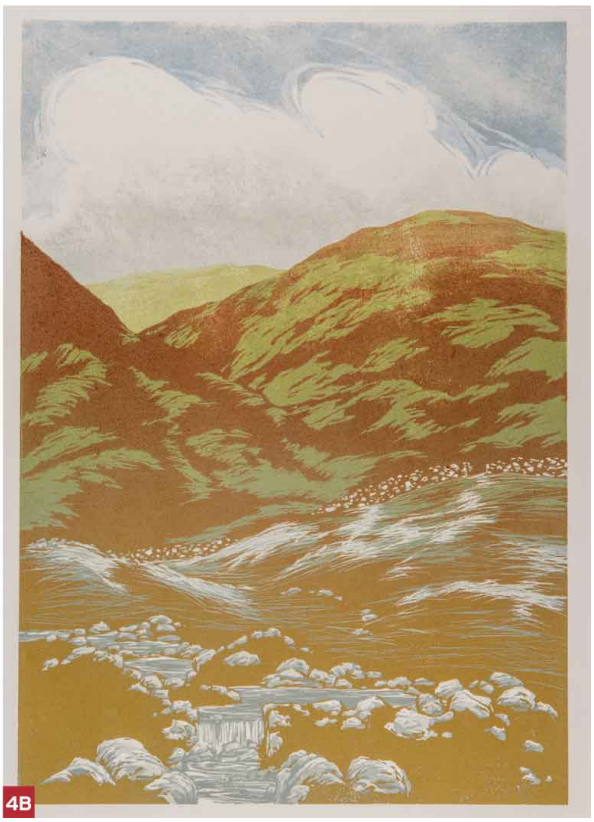
**Layer one:** the print was inked in a grey ink mixed at 10/90 with extender. No driers were used with this layer. The top part of the inking was wiped away with a lint-free cloth leaving a soft texture.

**Layer two:** the block is inked in two parts. Using a small roller, the sky was inked in a transparent blue (10 per cent ink to 90 per cent extender) and a cloth used to create texture. The landscape was inked in a rainbow roll of very extended ink (5 per cent ink to 95 per cent extender). The ink was rolled very thin to create texture and the top of the far hill wiped to thin the ink further. No drier was used.



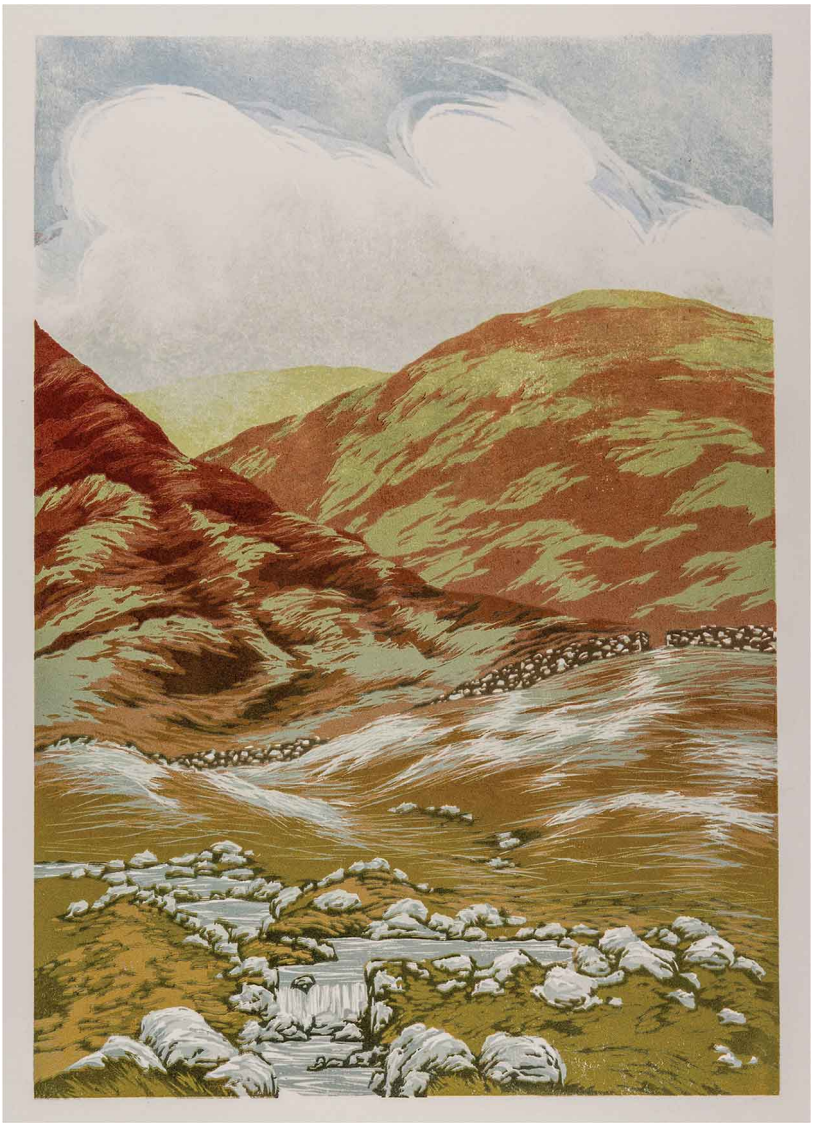
**Layer three:** a second layer of sky was inked up with a small roller and wiped for texture the same as in the previous layer. The landscape was also printed as before using the same green and grey as layer two, mixed at a slightly higher proportion of ink to extender. The top of the hill on the right was wiped for texture. The inking was still very thin; no drier was added.




**Layer four:** the landscape was inked with a rainbow roll of very thin ink. The ink for the final three layers is mixed at a ratio of roughly 10 per cent ink to 90 per cent extender. The colours were mixed to be bright, as they were printed thinly enough to be significantly knocked back by the layers of grey and green ink underneath when printed. The top of the right hill was wiped for texture and the area in the foreground was partially wiped. Wax drier was used at 2 per cent as the layers are now building up.

**Layer five:** the block was inked with a thin rainbow roll of extended bright ink. The wall in the centre of the print was wiped to prevent ink from building up on the detail. Wax drier was used at 2 per cent.



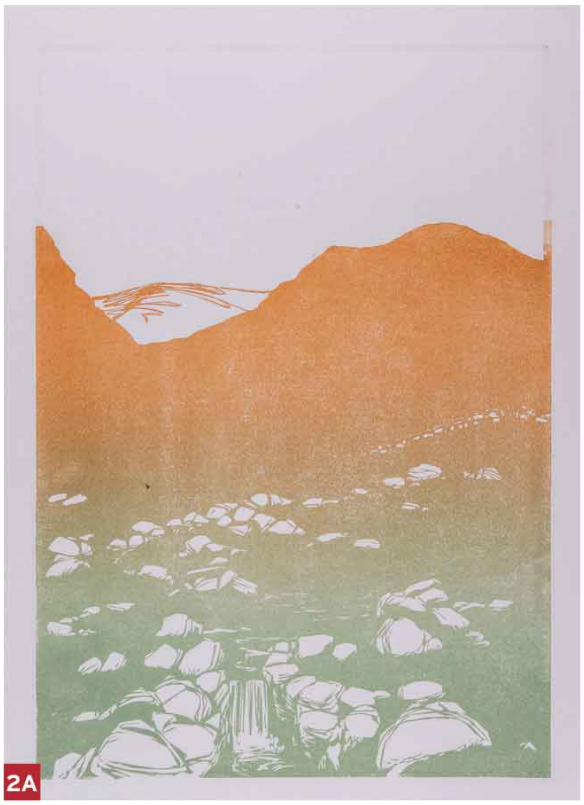
**Layer six:** a final rainbow roll of thin ink was applied under light pressure. Some of the foreground inking was gently wiped to vary the shadows in the foreground part of the print. The grey ink is transparent enough to appear greenish when printed over the other colours. No drier was needed for these scantily inked details.

# Print seven: Late Autumn Bright Day

23 × 33cm printed on Fabriano Rosaspina paper

This print is printed in five layers using a series of rainbow rolls. It is a slightly different version of print six with a partial border and a calmer feel.

**Layer one:** this layer was inked in a subtle rainbow roll of blue-grey opaque ink. No drier was used.



**Layer two:** the coloured inks for this layer were mixed with extender at a ratio of 10/90 per cent. They were mixed to be bright as they are subdued by the previous layer of ink on the print. The frame area was wiped clean to prevent a build-up of unnecessary colour layers. No drier was used.

**Layer three:** as with layer two, a bright rainbow roll of ink was used which is corrected to the right colour balance for the print by the layers of ink underneath. Here the proportion of ink to extender is higher for a slightly denser layer (approximately 20 per cent ink to 80 per cent extender). The frame area was wiped clean. Wax drier was added at 2 per cent.

4A

4B

**Layer four:** the printing of this layer was much the same as for layer three, but the pressure of the press was reduced to accommodate the much-reduced area of lino to be printed. The frame area was wiped clean, but its presence served to balance the weight of the press and keep it flat for even printing. Without the frame area at the top of the print to support the flat weight, the pressure would be less at the base of the print and the printing uneven (*see* 'Keeping an even pressure'). No drier was used on this layer.

**Layer five:** the final layer was inked in a layer of ink without extender, rolled thin enough to become slightly transparent. The print is printed on the press at a low pressure to keep the details crisp. The frame area of the print was then re-inked and worked over by hand, applying pressure with a glass baren. That ensured the frame area is fully and evenly printed. Driers were added at 2 per cent due to the slightly heavier dark ink on the frame area.

# Print eight: Limestone Edges

22 × 33cm printed on Fabriano Rosaspina paper

This print has six layers with areas of partial inking and areas of ‘free inking’ where ink is applied in a painterly style using several rollers and colours. The clouds in the sky are a result of brush painting directly onto the lino as a guide for cutting.

**Layer one**: this layer was printed in a flat layer of opaque ink without drier.

**Layer two**: the sky and the land were inked separately using different rollers. The ink was mixed with extender at about 30 per cent ink to 70 per cent extender. Wax drier was used at 2 per cent due to the complete layer of ink already applied in layer one.

3A

3B

**Layer three**: this layer was printed in the same grey as layer two but mixed at a higher proportion of ink to extender for a darker colour and wax drier was added at 2 per cent.

4A

4B

**Layer four**: this layer is printed with a mixture of three different greens. Working with small rollers, the inks were applied to the block freehand. Each print varies slightly as a result. The inks were mixed with extender at a ratio of approximately 10 per cent ink to 90 per cent extender and printed at varying thicknesses. Wax drier was added at 2 per cent.

5A

5B

**Layer five**: as with layer four, different coloured inks were applied with small rollers. This time two different greens were used. The bright colours are subdued by the previous layers of inking showing through the thin ink. Wax drier was used at 2 per cent.

**Layer six**: the final layer was printed using two shades of bluey green. The ink was still mixed with extender for transparency. The press was adjusted to print with a light pressure for this much reduced layer of lino. The remaining lino is not evenly distributed and did not keep the weight of the press level, leading to some loss of pressure in the foreground. To compensate I worked the print over by hand using a flat baren to ensure all details were printed properly. No dryer was used for this small amount of ink.

## CASE STUDIES FROM MY OWN WORK

I have taken two very different reduction prints from my own work for the following case studies. Unlike the other prints in this section,

these two were not designed specifically for this book and are both examples of the way that I would normally work in reduction linocut.

## Garden Seasons Summer

This print is from a series of four seasonal images. Working on a set of prints, or creating a set of parameters for a series of prints, is something that I do occasionally. I enjoy the challenge of designing prints that are both strong as individual pieces, but also work within a set of rules and with each other. In the case of the Garden Seasons series, the changing seasons are the first and most obvious rule, but there are others. They are as follows: a strong frame in dark red to dictate the same darkest colour for all four prints, a flat colour background with white silhouette details, further silhouettes to create a middle distance and a stylized foreground consisting entirely of plants. I also decided that I would only use plants that were growing in my own garden.

*This Garden Seasons* series owes a lot of its inspiration to vintage commercial poster art.

I referenced vintage poster art for ideas about designing this series. I have deliberately kept the colour saturated and strong in keeping with that slightly vintage feel. The only transparency comes from extender in the reds of the summer hollyhocks (adding white ink

would of course have turned them pink) and in the transparent white seed pods of the honesty in the winter print.

## Black Stone Beach

This is a print based on the Lochalsh Peninsula in Scotland, though I have taken some liberties with the far hill. My work begins with reality, sketches on location and photography, but I will manipulate my references to achieve the finished print. In this instance I wanted to contrast the architectural structure of the stones in the foreground with the organic form of the far hill. To do this I increased the hill's size and changed its shape, pulling it forward into the water.

In the final print, taken from his design drawing, the sea has been simplified and the colour palette kept monochrome and largely transparent to allow the linework to shine.

When I develop a design drawing, I often draw using contour lines to define shape as a sculptor might, trying to describe the three-dimensional qualities of the landscape. With *Black Stone Beach* I initially had plans to make the far hill coloured and textural, but I liked the linework on the hill so much that it became a feature of

the print. By the time I came to choose the colour palette I realized that it should be minimal to allow the linework to dominate. The fine net of lines for the far hill that I had isolated by cutting naturally pressed into my soft printing paper. I ended up leaving the top half of the linework as an un-inked blind emboss. It is always good to be open to responding to how the print develops; I never planned for the embossing, but it is a key part of the finished print.

# Case Study: Garden Seasons Summer

Edition of nine prints
Print size 25 x 50cm
Paper: Fabriano Rosaspina 285gsm
Ink: traditional oil based relief ink
Reduction print using traditional artist lino
Printed on an Albion Letterpress Press
Number of layers: fourteen

*Garden Seasons Summer* has a range of red, yellow, and green shades. White ink rather than extender is used to create the paler colours. Extender is only used here to create the red shades. The frame colour is a deep shade of red-black. Wax Drier was used for every layer.

*Garden Seasons Summer*, reduction linocut with fourteen layers.

Detail of *Garden Seasons Summer* showing the application of red inks at layer seven. Red on the leaf areas will be covered by the greens in later layers. Reversing the order of printing, with the red applied over green, would not work. The reds are made paler with extender rendering them transparent while the greens can be entirely opaque with white ink added for pale tones.

## LAYERS OF INKING AND CUTTING

1. White cow parsley cut away before printing.
2. Rainbow roll of pale to darker blue ink over entire print. Background area removed along with petal details in background hollyhocks.
3. Pale yellow green ink over entire print. Plant details removed including silhouetted hollyhock in background.
4. Brighter yellow green ink over entire print. Plant details removed, including remaining silhouetted hollyhocks in background.
5. Deeper sandy green ink layer over entire print. Nettle silhouette and other plant details removed.
6. Golden yellow ink layer over entire print with additional partial inking of extended red ink. Areas of nasturtiums removed along with palest areas of red hollyhocks.
7. Painterly application of mixed oranges and transparent mid-tone red inks over flowers with nettles at the sides avoided where possible. Areas of nasturtiums removed along with mid tone areas of red hollyhocks.
8. Darkest transparent red ink applied with small roller where needed. Dark transparent red hollyhock and all nasturtium flower detail removed.
9. Red-black ink applied with small roller to centre of hollyhock flowers only. All hollyhock flowers removed.
10. Painterly application of mid-tone olive green ink over entire area. Nettle leaves removed except for outline plus areas of hollyhock stem.
11. Painterly application of mid green ink over entire area. Some Nasturtium leaves removed along with outline around nettles, plus areas of hollyhock stem.
12. Painterly application of dark greens over entire area. All remaining plant areas removed.
13. Frame printed in red-black.

Detail of *Garden Seasons Summer* showing the block after layer eight with the darkest ink added as spot colour with a small roller. The dark border is added later.

# Case study: Black Stone Beach

Edition of fourteen prints
Print size 34 x 54cm
Paper: Fabriano Rosaspina 285gsm
Ink: traditional oil based relief ink
Reduction print using traditional artist lino
Printed on an Albion Letterpress Press
Number of layers: eleven

*Black Stone Beach*, a reduction linocut with eleven layers and blind embossing.

*Black Stone Beach* has a restricted palette of Payne's grey, Prussian blue, burnt umber, white, black and transparent extender. The print layers progress from light to dark and from transparent layers of extender with minimal added colour to opaque inking in the foreground only. Very little drier was used and only in the final layers. The print features blind embossing in the line work at the top of the far hill.

## LAYERS OF INKING AND CUTTING

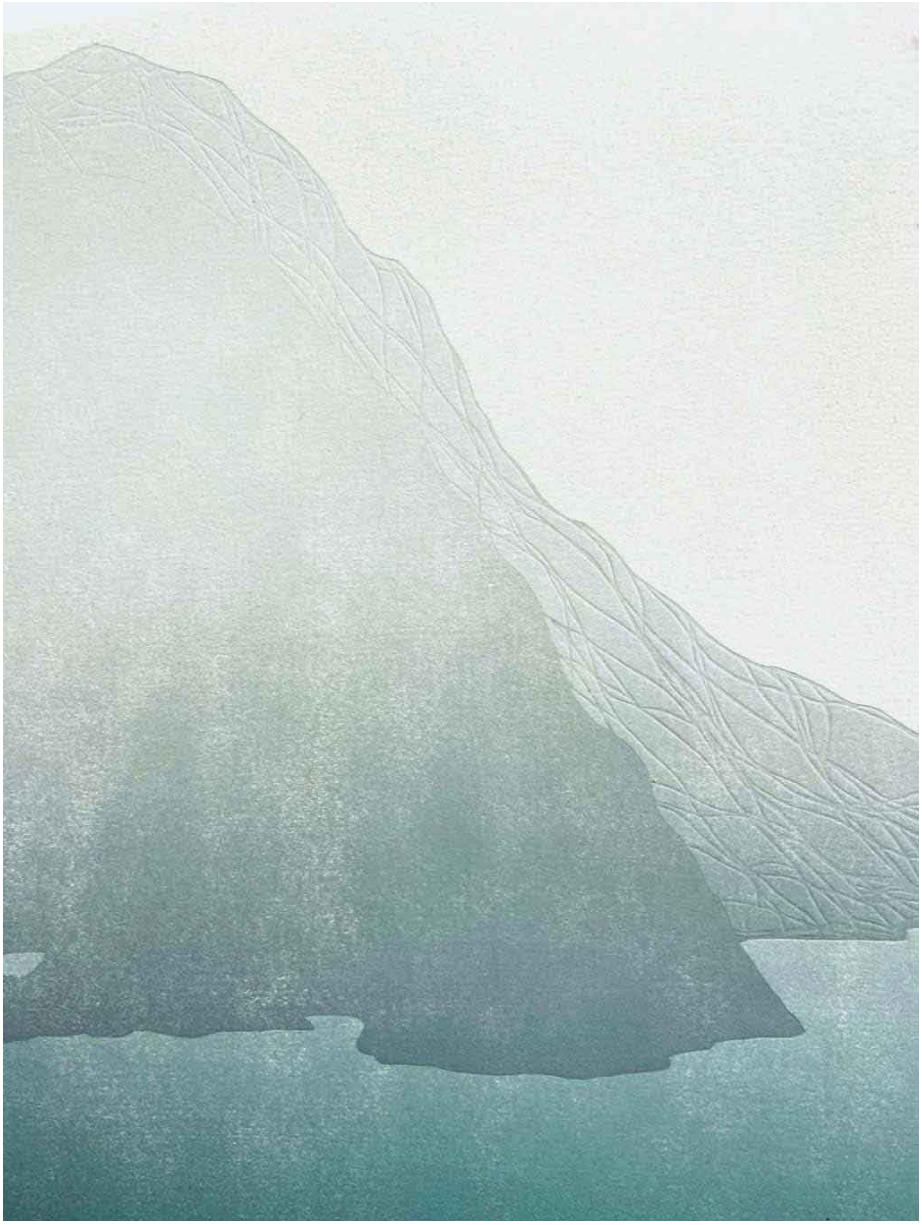
1 White waves cut away in the foreground before printing.
2 Transparent rainbow roll of pale blue to grey ink over the whole area. Sky and wave detail removed.
3 Transparent rainbow roll of pale blue to grey ink over the whole area. More waves removed.
4 Partial rainbow roll of transparent blue grey ink from foreground up to foot of the far hill only. Sea removed except for shadow areas in foreground water. Back area of hill cut away to reveal linework.
5 Rainbow roll of transparent grey ink over base of the far hill only, linework wiped clean before printing. Shade detail added to the water with a small roller in transparent blue. Mid area of far hill cut away to reveal linework.
6 Rainbow roll of transparent grey ink over base of the far hill only, linework wiped clean before printing. Opaque inking in pale blue of foreground beach (drier added). Forward area of far hill cut away to reveal linework.
7 Tops of stones removed on foreground beach area.
8 Rainbow roll of transparent grey over base of the far hill only, linework wiped clean before printing. Layer of semi-transparent dark grey added to foreground (drier added). Nearest area of far

hill cut away to reveal linework. Pale sides of rocks cut away in foreground.

9 Layer of semi-transparent dark grey added to foreground only (drier added). More side areas of foreground rocks cut away.

10 Layer of semi-transparent dark grey added to foreground only (drier added). Final solid areas of rocks and beach removed to reveal linework.

11 Rainbow roll of transparent grey over base of the far hill only, line work on hilltop left unprinted as an area of blind embossing. Thin layer of blue-black ink over linework in the foreground (drier added).



*Black Stone Beach* after the inking of layer five. At this stage the blind embossing appears in the far hill. I was very concerned that the emboss of the fine lines would become clumsy if registration wasn't perfect for the remaining layers. To my relief, the registration was fine and the embossing remains a delicate detail in the finished print.

The lino block for *Black Stone Beach*. Here I am cutting for the final layer of printing, removing the last of the bulk from the far hill to isolate the linework. The tool here is a Pfeil V tool no.12.

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# UK Supplier List

**Art Equipment Ltd**
www.art-equipment.co.uk
Manufacture and sale of presses, new and second hand.

**Caslon Ltd.**
www.caslon.co.uk
New and second-hand Adana printing presses, also spare parts.

**Great Art**
www.greatart.co.uk
General art supplier with a large section of printmaking supplies.

**Harry F Rochat**
www.harryrochat.com
Manufacture, sale and moving of presses, new and second hand.

**Handprinted**
www.handprinted.co.uk
Specialist printmaking supplies.

**Hawthorn Printmaker Supplies**
hawthornprintmaker.com
Printing inks, rollers and presses.

**Intaglio Printmaker**
www.intaglioprintmaker.com
Specialist printmaking supplies.

**Jacksons Art Supplies**
www.jacksonsart.com
General art supplier with a large section of printmaking supplies.

**John Purcell Paper**
www.johnpurcell.net
Art paper supplier with a range of printmaking papers.

**Laura Boswell**
www.lauraboswell.co.uk
Registration jigs for hand and press printing.

**Lawrence Art Supplies**
www.lawrence.co.uk
General art supplier with a large section of printmaking supplies.

**Shepherds**
www.bookbinding.co.uk
Art paper supplier with a range of printmaking papers.

**Workshop Heaven**
www.workshopheaven.com
Specialist tool shop with a wide range of sharpening stones, lapping film and so on.

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